230 West Monroe Street
Suite 2370
Chicago, IL 60606

312.578.0870 PHONE
312.578.0877 FAX

www.TRCsolutions.com

October 3, 2011

Mr. Jim Baumann
Special Assistant to Bureau Director
Bureau of Watershed Management
Wisconsin Department of Natural Resources
101 S. Webster Street, Box 7921
Madison, WI 53707-7921

Ms. Jean Greensley
U.S. Environmental Protection Agency
Remediation and Reuse Branch
Land and Chemicals Division
77 W. Jackson Boulevard
Chicago, IL 60604-3511

Re: Proposed Overbank Removal Boundaries and Sample Results
Operable Unit 3, Reach L
Hayton Area Remediation Project

Dear Mr. Baumann and Ms. Greensley:

On August 12, 2011, WDNR submitted its review of the proposed removal boundaries in Reaches K, L and M, and identified locations where additional sampling is needed to adequately define removal boundaries. On September 14, 2011, WDNR submitted draft Conditions of Approval for Reaches K, L and M, which specified additional locations for characterization and post-remedial verification (PRV) sampling. To address each of the locations identified by WDNR, TRC has collected additional characterization samples in Reaches K, L and M, and has modified removal boundaries, as appropriate.

Enclosed for your approval are a figure and tables showing modified overbank removal boundaries in Reach L of the Hayton Area Remediation Project, Operable Unit 3 (OU3). Electronic copies of this submittal are also being provided via email to James.Baumann@Wisconsin.gov and Greensley.Jean@epamail.epa.gov.

Table 1 lists the additional characterization samples were collected and analyzed in Reach L to address each of the locations identified by WDNR. Figure 1 shows the sample results and modified removal boundaries. The additional characterization samples and modified removal boundaries are shown in magenta.

Figure 1 also shows the locations of proposed post-remedial verification (PRV) samples in Reach L. TRC has added PRV sample locations based on those requested in the September 14, 2011 draft Conditions of Approval. Several PRV sample locations were added based the modified removal boundaries. Table 2 is an updated list of PRV sample locations in Reach L. Table 3 provides the rationale for each of the modified removal

boundaries. Table 4 is an updated list of stream bank PRV samples. Table 4 also indicates the segment of stream bank (by Station ID) that is represented by each stream bank PRV sample.

As requested, TRC has also enclosed copies of the following reference documents to help streamline the review and approval process:

- Reach L sample elevation information from the *HARP OU2/L & OU3 In-Channel and Overbank Sampling Technical Memorandum* (February 2006);
- Reach L soil boring log information from the *HARP OU2/L & OU3 In-Channel and Overbank Sampling Technical Memorandum* (February 2006);
- Figures of the stream channel location in Reach L, from the Earth Tech document *HARP OU3 Overbank Sampling and Analysis Plan* (December 2003)
- Reach L soil boring logs from the Earth Tech document *HARP OU3 Overbank Sampling and Analysis Plan* (December 2003)

We would appreciate your comments and approval for Reach L by October 14, 2011.

Please contact me at (312) 578-0870, extension 8486, with any questions.

Sincerely,
TRC

Christopher D. Harvey, PE
Program Manager

Enclosures: *Figure 1 - Sample Results, Excavation Boundaries and Proposed PRV Samples, Reach L*
Table 1- Additional Characterization Sampling Results 2011, Reach L
Table 2- Rationale for Modified Removal Boundaries, Reach L
Table 3 – Proposed Post-Removal Verification Samples, Reach L
Table 4 - Proposed Stream Bank PRV Samples, Reach L
Reach L Reference Documents

Table 1. Additional Characterization Sampling Results 2011
Reach L
Hayton Area Remediation Project

10/03/2011

Sample Name	Total PCBs (mg/kg)	Location	Comments
RL 014L 0-6	35.7	1LL / L108	
RL 014L 6-12	43.5	1LL / L108	
RL 014L 12-18	0.337	1LL / L108	
RL 014L 18-24	3.74	1LL / L108	
RL 015L 0-6	24.2	1LL / L109	
RL 015L 6-12	28.4	1LL / L109	
RL 015L 12-18	0.204	1LL / L109	
RL 016L 0-6	7.32	3LLa / L110	
RL 016L 6-12	24.1	3LLa / L110	
RL 016L 12-18	4.66	3LLa / L110	
RL 017L 0-6	0.212	6LL	
RL 017L 6-12	0.0351 (J)	6LL	
RL 018L 6-12	0.1 (J)	4LL	
RL 019L 6-12	<0.0336	5LL	
RL 020L 0-6	2.4	14LL	
RL 020L 6-12	0.234	14LL	
DUP 113	0.367	14LL	
RL 021L 0-6	25.9	1LL / L108a	
RL 021L 6-12	2.83	1LL / L108a	
RL 021L 12-18	1.1	1LL / L108a	
RL 022L 0-6	19.4	1LL / L108a	
RL 022L 6-12	4.58	1LL / L108a	
RL 022L 12-18	2.97	1LL / L108a	
RL 023L 0-6	22.7	1LL / L108a	
RL 023L 6-12	2.96	1LL / L108a	
RL 023L 12-18	0.234	1LL / L108a	
DUP 117	0.0518 (J)	1LL / L108a	
RL 024L 0-6	3.18	1LL / L109	
RL 024L 6-12	0.716	1LL / L109	
RL 025L 0-6	14.3	1LL / L109	
RL 025L 6-12	4.33	1LL / L109	
RL 026L 0-6	0.541	1LL / L109	
RL 026L 6-12	0.221	1LL / L109	
RL 027L 0-6	17	3LLa / L102	
RL 027L 6-12	3.14	3LLa / L102	
RL 028L 0-6	11.5	3LLa / L110	
RL 028L 6-12	15.3	3LLa / L110	
RL 029L 0-6	9.97	3LLa / L110	
DUP 118	13.3	3LLa / L110	
RL 029L 6-12	22.2	3LLa / L110	
RL 030L 0-6	7.21	1LL / L108a	at high point near top of bank
RL 031L 0-6	14.5	1LL / L108a	
RL 032L 0-6	19.7	1LL / L108a	at high point near top of bank
RL 033L 0-6	3.31	1LL / L109	at high point near top of bank
RL 033L 6-12	0.684	1LL / L109	
RL 034L 0-6	6.18	3LLa / L110	at high point near top of bank
RL 034L 6-12	7.0	3LLa / L110	
RL 035L 0-6	6.84	3LLa / L102	

Table 1. Additional Characterization Sampling Results 2011
Reach L
Hayton Area Remediation Project

10/03/2011

Sample Name	Total PCBs (mg/kg)	Location	Comments
RL 036L 0-6	5.36	3LLa / L102	at high point near top of bank
RL 036L 6-12	4.67	3LLa / L102	
RL 037L 0-6	4.04	L108a	at high point near top of bank
DUP 122	5.59	L108a	
RL 038L 0-6	0.255	L108a	
RL 039L 0-6	6.69	3LLa / L110	at high point near top of bank
RL 039L 6-12	7.81	3LLa / L110	at high point near top of bank
RL 040L 0-6	4.93	3LLc / L102	
RL 041L 0-6	9.05	1LL / L108a	at high point near top of bank
RL 041L 6-12	3.46	1LL / L108a	
RL 042L 0-6	2.41	L110	at high point near top of bank
RL 042L 6-12	0.193	L110	at high point near top of bank
DUP 127	0.26	L110	
RL 043L 0-6	1.28	14LL / L107	
RL 044L 0-6	5.3	1LL / L108a	
RL 044L 6-12	0.098 (J)	1LL / L108a	
RL 045L 0-6	2.22	L108a	
RL 511R 0-6	17.7	3LR / L201c	
RL 511R 6-12	11.3	3LR / L201c	
RL 511R 12-18	3	3LR / L201c	
RL 512R 0-6	0.531	7LR	
RL 512R 6-12	<0.0361	7LR	
DUP 112	0.0479 (J)	7LR	
RL 513R 0-6	2.42	8LR	
RL 513R 6-12	0.516	8LR	
RL 514R 0-6	2.31	4LR / L201c	
RL 514R 6-12	0.591	4LR / L201c	
RL 515R 0-6	0.518	6LR	
RL 515R 6-12	0.197	6LR	
RL 516R 0-6	6.64	11LR / L205	at high point near top of bank
RL 516R 6-12	0.232	11LR / L205	at high point near top of bank
RL 517R 0-6	6.64	3MR / L206	
RL 517R 6-12	1.3	3MR / L206	
RL 518R 0-6	12.4	1LR / L201c	
RL 518R 6-12	6.44	1LR / L201c	
RL 518R 12-18	0.287	1LR / L201c	
RL 519R 0-6	0.0405	1LR / L201c	
RL 519R 6-12	<0.0361	1LR / L201c	
RL 520R 0-6	5.63	L201c	
RL 520R 6-12	0.527	L201c	
RL 521R 0-6	9.49	L205	
RL 522R 0-6	0.532	L205	
RL 523R 0-6	1.8	L205	
RL 524R 0-6	3.5	L206	
RL 525R 0-6	5.13	L206	
RL 526R 0-6	3.92	L201d	
RL 527R 0-6	2.34	L201d	
RL 528R 0-6	4.77	9LR / L205	at high point near top of bank

Table 1. Additional Characterization Sampling Results 2011
Reach L
Hayton Area Remediation Project

10/03/2011

Sample Name	Total PCBs (mg/kg)	Location	Comments
RL 529R 0-6	6.9	L205	about 20 away from bank
RL 530R 0-6	4.58	L205	about 35 ft away from bank
RL 531R 0-6	2.46	L201	
RL 531R 6-12	0.503	L201	
RL 532R 0-6	6.87	L202	
RL 533R 0-6	11.9	L202	
RL 534R 0-6	3.01	L202	

(J) = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

Table 2. Rationale for Modified Removal Boundaries
Reach L
Hayton Area Remediation Project

10/03/2011

Removal Zone ID	Rationale
L102	• Upstream boundary established by samples RL-270+00-W10 0-6" = 3.6 mg/kg; and RL 042L 0-6" = 2.41 mg/kg. • Upland boundary established by samples RL-270+00-W10 0-6" = 3.6 mg/kg; RL 040L 0-6" = 4.93 mg/kg; and the northwest polygon boundary of 3LLc, with reference to sample RL-272+00-W40 0-6" = 0.37 mg/kg. • Downstream boundary established by sample RL 004L 0-6" = 2.53 mg/kg. • Boundary with L110 established by sample RL 027L 6-12" = 3.14 mg/kg; the polygon line between 3LLa and 3LLc; and sample RL 036L 6-12" = 4.67 mg/kg. • Floor established by samples RL 027L 6-12" = 3.14 mg/kg; and RL-272+00-W10 6-12" = 0.72 mg/kg.
L108	• Upstream boundary established by sample RL 022L 6-12" = 4.56 mg/kg. • Upland boundary established by sample RL 021L 6-12" = 2.83 mg/kg. • Downstream boundary established by sample RL 023L 6-12" = 2.96 mg/kg. • Floor established by sample RL 014L 12-18" = 0.337 mg/kg.
L108a	• Upstream boundary established by samples RL 041L 6-12" = 3.46 mg/kg; RL 044L 6-12" = 0.098 (J) mg/kg; and RK 042L 6-12" = 0.349 mg/kg. • Upland boundary established by samples RL 045L 0-6" = 2.22 mg/kg; RL 038L 0-6" = 0.255 mg/kg; and RL 001L 0-6" = 1.5 mg/kg. • Downstream boundary established by sample RL 001L 0-6" = 1.5 mg/kg. • Boundary with L108 established by samples RL 022L 6-12" = 4.58 mg/kg; RL 021L 6-12" = 2.83 mg/kg; and RL 023L 6-12" = 2.96 mg/kg. • Floor established by samples RL 022L 6-12" = 4.58 mg/kg; RL 021L 6-12" = 2.83 mg/kg; RL 023L 6-12" = 2.96 mg/kg; RL 041L 6-12" = 3.46 mg/kg; and RL 044L 6-12" = 0.098 (J) mg/kg.
L109	• Upstream boundary established by samples RL 024L 0-6" = 3.18 mg/kg; and RL 024L 6-12" = 0.716 mg/kg. • Upland boundary established by samples RL 026L 0-6" = 0.541 mg/kg; and RL 026L 6-12" = 0.221 mg/kg. • Downstream boundary established by samples RL 033L 0-6" = 3.31 mg/kg; and RL 033L 6-12" = 0.664 mg/kg. • Floor established by sample RL 015L 12-18" = 0.204 mg/kg.
L110	• Upstream boundary established by samples RL 042L 0-6" = 2.41 mg/kg; and RL 042L 6-12" = 0.193 mg/kg. • Boundary with L102 established by sample RL 027L 6-12" = 3.14 mg/kg; the polygon line between 3LLa and 3LLc; and sample RL 036L 6-12" = 4.67 mg/kg. • Downstream boundary established by sample RL 036L 6-12" = 4.67 mg/kg. • Floor established by sample RL 016L 12-18" = 4.66 mg/kg.
L201c	• Upstream boundary established by sample RL 504R 0-6" = 3.83 mg/kg. • Upland boundary established by the upland polygon line of 1LR, with reference to samples RL 519R 0-6" = 0.0405 (J) mg/kg; and RL 519R 6-12" = <0.0361 mg/kg; and sample RL 520R 6-12" = 0.527 mg/kg. • Boundary with L201d established by the upland polygon boundary of 4LR, with reference to sample RL 520R 6-12" = 0.527 mg/kg. • Downstream boundary established by samples RL 514R 0-6" = 2.31 mg/kg; and RL 514R 6-12" = 0.591 mg/kg. • Floor established by samples RL 518R 12-18" = 0.287 mg/kg; and RL 511R 12-18" = 3.0 mg/kg.

Table 2. Rationale for Modified Removal Boundaries
Reach L
Hayton Area Remediation Project

10/03/2011

Removal Zone ID	Rationale
L201d	• Upstream boundary established by sample RL 520R 6-12" = 0.527 mg/kg. • Upland boundary established by sample RL 526R 0-6" = 3.92 mg/kg. • Boundary with L201c established by the upland polygon boundary of 4LR, with reference to sample RL 520R 6-12" = 0.527 mg/kg. • Downstream boundary established by sample RL 527R 0-6" = 2.34 mg/kg. • Floor established by sample RL 520R 6-12" = 0.527 mg/kg.
L202	• Upstream boundary established by sample RL 534R 0-6" = 3.01 mg/kg. • Upland boundary established by samples RL 534R 0-6" = 3.01 mg/kg; RL-268+70-E60 0-6" = 1.5 mg/kg; and the upland polygon boundary of 2LRa, with reference to samples RL 519R 0-6" = 0.0405 (J) mg/kg and RL 534R 0-6" = 3.01 mg/kg. • Boundary with L201 and L201b established by the upland polygon line of 1LR, with reference to samples RL-268+70-E60 6-12" = 0.67 mg/kg and RL 519R 6-12" = <0.0361 mg/kg. • Downstream boundary established by the upland polygon line of 1LR, with reference to sample RL 519R 0-6" = 0.0405 (J) mg/kg. • Floor established by sample RL-268+70-E30 6-12" = 0.67 mg/kg.
L205	• Upstream boundary established by samples RL 528R 0-6" = 4.77 mg/kg; and RL 530R 0-6" = 4.58 mg/kg. • Upland boundary established by samples RL 530R 0-6" = 4.58 mg/kg; and RL 523R 0-6" = 1.6 mg/kg; and the polygon line between 11LR and 12LR, with reference to sample RL 523R 0-6" = 1.6 mg/kg. • Downstream boundary established by sample RL 522R 0-6" = 0.532 mg/kg. • Floor established by sample RL 516R 6-12" = 0.232 mg/kg.
L206	• Upstream boundary established by the creek bank near station 281+90. • Upland (northeast) boundary established by sample RL 524R 0-6", following the top of the ditch based on field observation. • Southeast boundary established by following the top of the ditch based on field observation. A post-removal verification sample (RL PRVW 514R 0-6") will be collected at the top of the ditch. • Downstream boundary established by the creek bank near station 287+00 (in Reach M). • Floor established by sample RL 517R 6-12" = 1.3 mg/kg.

(J) = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

Table 3. Proposed Post-Removal Verification Samples
Reach L
Hayton Area Remediation Project

10/03/2011

Sample ID	In-channel[1] or Overbank	Type	Northing	Easting
RL IC PRVF 900C	In-channel	Floor	733693	2469474
RL IC PRVF 901C	In-channel	Floor	733878	2469386
RL IC PRVF 902C	In-channel	Floor	734124	2469360
RL IC PRVF 903C	In-channel	Floor	734320	2469277
RL IC PRVF 904C	In-channel	Floor	734570	2469263
RL IC PRVF 905C	In-channel	Floor	734701	2469038
RL BK PRVW 001L	Stream bank	Sidewall	733741	2469462
RL BK PRVW 002L	Stream bank	Sidewall	733757	2469360
RL BK PRVW 003L	Stream bank	Sidewall	733886	2469385
RL BK PRVW 004L	Stream bank	Sidewall	733956	2469449
RL BK PRVW 005L	Stream bank	Sidewall	734116	2469363
RL BK PRVW 006L	Stream bank	Sidewall	734240	2469212
RL BK PRVW 007L	Stream bank	Sidewall	734427	2469337
RL BK PRVW 008L	Stream bank	Sidewall	734571	2469247
RL BK PRVW 009L	Stream bank	Sidewall	734693	2469165
RL BK PRVW 010L	Stream bank	Sidewall	734654	2468974
RL BK PRVW 011L	Stream bank	Sidewall	734046	2469406
RL BK PRVW 012L	Stream bank	Sidewall	734185	2469232
RL BK PRVW 500R	Stream bank	Sidewall	733752	2469470
RL BK PRVW 501R	Stream bank	Sidewall	733767	2469370
RL BK PRVW 502R	Stream bank	Sidewall	733879	2469394
RL BK PRVW 503R	Stream bank	Sidewall	733956	2469459
RL BK PRVW 504R	Stream bank	Sidewall	734127	2469367
RL BK PRVW 505R	Stream bank	Sidewall	734238	2469229
RL BK PRVW 506R	Stream bank	Sidewall	734436	2469349
RL BK PRVW 507R	Stream bank	Sidewall	734580	2469274
RL BK PRVW 508R	Stream bank	Sidewall	734706	2469166
RL BK PRVW 509R	Stream bank	Sidewall	734681	2468977
RL BK PRVW 510R	Stream bank	Sidewall	734049	2469418
RL BK PRVW 511R	Stream bank	Sidewall	734724	2469078
RL PRVF 511R 12-18 "	Overbank	Floor	733781	2469372
RL PRVF 512R 12-18 "	Overbank	Floor	734320	2469303
RL PRVF 513R 6-12 "	Overbank	Floor	734709	2468931
RL PRVF 514R 12-18"	Overbank	Floor	733899	2469423
RL PRVF 515R 6-12"	Overbank	Floor	734566	2469289
RL PRVF 516R 6-12"	Overbank	Floor	734800	2468961
RL PRVF 517R 6-12"	Overbank	Floor	733659	2469506
RL PRVW 518R 0-6"	Overbank	Sidewall	733655	2469515
RL PRVW 519R 0-6"	Overbank	Sidewall	733769	2469470
RL PRVW 520R 0-6"	Overbank	Sidewall	733805	2469420
RL PRVF 521R 6-12"	Overbank	Floor	733821	2469380

Table 3. Proposed Post-Removal Verification Samples
Reach L
Hayton Area Remediation Project

10/03/2011

Sample ID	In-channel[1] or Overbank	Type	Northing	Easting
RL PRVF 014L 12-18 "	Overbank	Floor	734439	2469321
RL PRVF 015L 6-12 "	Overbank	Floor	734677	2469164
RL PRVF 016L 18-24 "	Overbank	Floor	734704	2469086
RL PRVF 017L 0-6 "	Overbank	Sidewall	734680	2469057
RL PRVF 017L 6-12 "	Overbank	Sidewall	734680	2469057
RL PRVF 017L 12-18 "	Overbank	Sidewall	734680	2469057
RL PRVF 018L 12-18"	Overbank	Floor	733726	2469450
RL PRVF 019L 12-18"	Overbank	Floor	733964	2469434
RL PRVW 020L 0-6"	Overbank	Sidewall	733756	2469327
RL PRVW 021L 0-6"	Overbank	Sidewall	734442	2469317
RL PRVW 021L 6-12"	Overbank	Sidewall	734442	2469317

[1] The locations of in-channel samples may be adjusted, or additional in-channel samples may be added, based on visual cues observed during removal.

Table 4. Proposed Stream Bank PRV Samples - Reach L
Hayton Area Remediation Project

10/03/2011

PRV Sample Name or Removal Zone	Length of Streambank Represented		Description
	Upstream Station	Downstream Station	
Right Bank			
RL BK PRVW 500R	266+00	268+00	Outer meander along L201a and L201
RL BK PRVW 501R	268+00	269+45	Inner meander along L201 and L201b
RL BK PRVW 502R	269+45	270+50	Straight section downstream of L201b
RL BK PRVW 503R	270+50	271+40	Outer meander
RL BK PRVW 510R	271+40	272+50	Straight section near Station 272+00
RL BK PRVW 504R	272+50	273+75	Outer meander
RL BK PRVW 505R	273+75	276+00	Inner meander
RL BK PRVW 506R	276+00	278+00	Outer meander opposite of L103
RL BK PRVW 507R	278+00	279+80	Straight section
RL BK PRVW 508R	279+80	281+20	Outer meander opposite of L105 and L106
RL BK PRVW 511R	281+20	282+00	Opposite of L106
RL BK PRVW 509R	282+00	284+00	Inner meander along L204
Left Bank			
RL BK PRVW 001L	266+00	268+00	Inner meander opposite of L201a and L201
RL BK PRVW 002L	268+00	269+65	Outer meander along L101
RL BK PRVW 003L	269+65	270+50	Straight section
RL BK PRVW 004L	270+50	271+40	Inner meander
RL BK PRVW 011L	271+40	272+50	Straight section near Station 272+00
RL BK PRVW 005L	272+50	273+75	Inner meander
RL BK PRVW 012L	273+75	274+70	Left bank at 274+40, along polygon 4LL
RL BK PRVW 006L	274+70	276+00	Outer meander
RL BK PRVW 007L	276+00	278+00	Inner meander along L103
RL BK PRVW 008L	278+00	279+80	Straight section upstream of L105
RL BK PRVW 009L	279+80	281+10	Inner meander along L105
L106	281+10	282+10	18 removal "
RL BK PRVW 010L	282+10	284+00	Outer meander along L107

Table 1. In-Channel Sampling Location Summary
HARP OU2/L & OU3

Sampling Point	Date	Northing	Easting	Elevation	Sampling Depth	Sediment Thickness	Average Sediment Thickness	Water Depth	Calculated Water Elevation	Average Water Elevation
		(State Plane - ft)		(NAVD - ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
RI-222+30-IC	08/24/05	731,467.0	2,471,800.0	816.6	1.40	0.80	Reach I 0.7	1.55	818.2	Reach I 818.1
RI-227+00-IC	08/24/05	731,768.3	2,471,618.9	817.1	1.00	0.40		0.94	818.0	
RI-231+30-IC	08/24/05	731,991.8	2,471,366.4	816.4	0.90	0.80		1.56	818.0	
RJ-232+50-IC	08/24/05	731,960.9	2,471,236.3	816.7	1.00	0.60	Reach J 0.6	1.19	817.9	Reach J 817.8
RJ-234+50-IC	08/24/05	731,946.3	2,471,092.2	816.6	1.10	0.50		1.32	817.9	
RJ-237+00-IC	08/24/05	731,962.2	2,470,919.9	816.3	0.80	0.80 H		1.41	817.7	
RJ-241+20-IC	08/24/05	732,197.4	2,470,774.5	816.6	0.80	0.50		1.31	817.9	
RJ-243+50-IC	08/24/05	732,251.7	2,470,610.2	817.0	1.50	0.60		0.62	817.6	
RJ-247+70-IC	08/24/05	732,586.7	2,470,462.9	816.4	1.10	0.50		1.49	817.9	
RJ-249+40-IC	08/24/05	732,732.7	2,470,466.3	815.9	1.40	0.40		1.82	817.7	
RK-251+10-IC	08/24/05	732,817.5	2,470,353.7	815.8	1.20	0.30	Reach K 0.4	1.87	817.7	Reach K 817.1
RK-252+50-IC	08/24/05	732,811.0	2,470,130.0	816.1	0.90	0.50		1.47	817.6	
RK-254+80-IC	08/24/05	732,843.0	2,470,022.3	815.6	0.90	0.50		1.79	817.4	
RK-257+00-IC	08/24/05	733,009.0	2,469,849.9	816.1	0.80	0.25		1.29	817.4	
RK-259+00-IC	08/24/05	733,146.1	2,469,890.4	815.8	1.50	0.40		1.49	817.3	
RK-263+50-IC	08/23/05	733,418.4	2,469,614.9	815.4	1.00	0.50		0.92	816.3	
RK-265+00-IC	08/23/05	733,552.9	2,469,534.0	815.3	1.40	0.60		0.70	816.0	
RL-266+40-IC	08/23/05	733,626.0	2,469,526.5	815.0	0.75	0.60	Reach L 0.6	0.92	815.9	Reach L 816.0
RL-268+70-IC	08/23/05	733,743.1	2,469,405.5	814.7	1.20	0.60		1.19	815.9	
RL-272+00-IC	08/23/05	734,038.0	2,469,413.2	814.9	0.70	0.20		1.18	816.1	
RL-277+70-IC	08/23/05	734,440.9	2,469,334.3	814.5	0.80	0.70		1.36	815.9	
RL-282+00-IC	08/23/05	734,705.1	2,469,148.9	815.0	0.80	0.80 H		1.09	816.1	
RM-287+50-IC	08/23/05	735,053.8	2,468,763.3	814.6	1.00	0.50	Reach M 0.7	1.15	815.8	Reach M 815.7
RM-290+00-IC	08/23/05	735,231.3	2,468,693.8	814.6	0.60	0.60 C		0.94	815.5	
RM-293+30-IC	08/23/05	735,424.5	2,468,696.0	814.5	0.90	0.70		1.21	815.7	
RM-295+40-IC	08/23/05	735,395.5	2,468,466.8	814.9	1.25	0.60		0.82	815.7	
RM-298+50-IC	08/23/05	735,595.0	2,468,395.8	814.6	1.30	0.90		1.09	815.7	
RN-304+50-IC	08/23/05	735,738.2	2,467,978.9	813.8	1.25	0.70	Reach N 0.8	1.72	815.5	Reach N 815.5
RN-307+60-IC	08/23/05	735,832.4	2,467,838.2	814.3	0.80	0.80 H		1.30	815.6	
RN-311+60-IC	08/23/05	736,013.6	2,467,550.3	814.5	1.30	0.70		0.87	815.4	
RN-314+00-IC	08/23/05	736,171.1	2,467,397.8	814.3	0.90	0.90 C		1.08	815.4	
RN-317+00-IC	08/23/05	736,349.5	2,467,198.7	814.1	0.70	0.70 H		1.43	815.5	

Table 2. Sediment Poling Summary
HARP OU2/L & OU3

Reach	Poling Location	Northing	Easting	Sediment Thickness Observations (ft)			Average Sediment Thickness (ft)	
		(State Plane - ft)		Left Side	Center	Right Side	Across Creek	Reach
H	265	730,919.57	2,472,741.24	0.5	0.8	0.8	0.7	0.7
	266	730,982.20	2,472,711.68	1.7	1.7	1.7	1.7	
	267	731,015.34	2,472,677.62	0.3	0.3	0.3	0.3	
	268	731,075.17	2,472,636.75	0.5	0.2	0.2	0.3	
	268A	731,152.30	2,472,595.78	0.5	0.3	0.3	0.4	
	269	731,272.09	2,472,478.67	0.8	0.8	0.3	0.6	
	270	731,411.25	2,472,318.05	0.7	0.7	0.7	0.7	
I	271	731,300.17	2,472,113.86	0.7	1.0	0.7	0.8	0.5
	272	731,328.58	2,472,065.83	0.3	0.5	0.5	0.4	
	273	731,477.46	2,471,894.80	0.5	0.5	0.5	0.5	
	274	731,514.30	2,471,772.68	0.2	0.5	0.8	0.5	
	275	731,535.45	2,471,779.23	0.5	0.5	0.5	0.5	
	276	731,694.86	2,471,788.77	0.5	0.5	0.5	0.5	
	276A	731,758.95	2,471,645.70	0.5	0.6	0.6	0.6	
	277	731,868.58	2,471,460.25	0.5	0.5	0.5	0.5	
J	278	731,954.97	2,471,252.06	0.5	0.5	0.5	0.5	0.5
	279	731,945.38	2,471,098.73	0.5	0.5	0.5	0.5	
	280	731,963.72	2,470,919.30	0.5	0.5	0.5	0.5	
	281	732,431.60	2,470,569.89	0.5	0.5	0.5	0.5	
	281A	732,529.05	2,470,492.65	0.6	0.6	0.6	0.6	
K	282	732,880.42	2,470,265.68	0.5	0.5	0.5	0.5	0.7
	283	732,827.64	2,470,186.64	0.6	0.6	0.6	0.6	
	284	732,896.30	2,469,896.79	1.0	0.5	1.0	0.8	
	285	733,202.12	2,469,766.35	0.8	0.8	0.8	0.8	
	285A	733,208.65	2,469,740.51	0.8	0.8	0.8	0.8	
	286	733,324.34	2,469,705.33	0.6	0.6	0.6	0.6	
L	287	733,924.73	2,469,425.82	0.6	0.6	0.6	0.6	0.6
	288	734,045.91	2,469,409.89	0.8	0.8	0.8	0.8	
	289	734,158.31	2,469,275.71	0.6	0.6	0.6	0.6	
	290	734,290.95	2,469,259.97	0.6	0.6	0.6	0.6	
	290A	734,334.56	2,469,306.12	0.5	0.5	0.5	0.5	
	291	734,499.06	2,469,294.25	0.5	0.5	0.5	0.5	
	292	734,595.54	2,469,261.34	0.5	0.5	0.5	0.5	
	293	734,659.91	2,469,203.34	0.6	0.6	0.2	0.5	
	294	734,679.45	2,468,943.58	0.5	0.5	1.0	0.7	
M	295	734,753.61	2,468,797.58	1.0	1.0	1.0	1.0	0.6
	296	734,924.88	2,468,780.06	0.5	0.5	0.8	0.6	
	297	735,027.67	2,468,783.37	0.5	0.5	0.5	0.5	
	297A	735,058.59	2,468,770.16	0.5	0.5	0.5	0.5	
	298	735,137.80	2,468,711.83	0.7	0.6	0.6	0.6	
	298A	735,225.50	2,468,698.14	0.6	0.6	0.6	0.6	
	299	735,357.62	2,468,782.76	0.6	0.6	0.6	0.6	
	300	735,432.04	2,468,698.48	0.6	0.6	0.6	0.6	
	301	735,389.87	2,468,558.65	0.5	0.5	0.5	0.5	
	301A	735,382.81	2,468,484.04	0.5	0.5	0.5	0.5	
	302	735,460.54	2,468,388.67	0.5	0.5	0.5	0.5	
	303	735,551.30	2,468,345.84	1.5	0.6	0.6	0.9	
	304	735,640.40	2,468,383.13	0.8	0.8	0.8	0.8	
	305	735,675.57	2,468,279.22	0.5	1.0	1.0	0.8	
	306	735,713.46	2,468,183.04	0.6	0.6	0.6	0.6	
	307	735,641.51	2,468,069.58	0.5	0.5	0.5	0.5	

Table 3. Overbank Sampling Location Summary
HARP OU2/L & OU3

Sampling Point	Date	Northing	Easting	Elevation	Original Point or Step-Out	Sampling Depth
		(State Plane - ft)		(NAVD - ft)		(ft)
RJ-246+20-S80	09/29/05	732,457.68	2,470,508.68	na	Sept/Oct. Step-Out	2.4
RJ-247+50-E20	11/11/05	732,577.29	2,470,498.70	na	Nov. Step-Out	4.0
RJ-247+70-E20	09/14/05	732,594.78	2,470,489.01	818.6	Original Point	2.25
RJ-247+70-E40	09/29/05	732,596.18	2,470,508.96	na	Sept/Oct. Step-Out	2.2
RJ-247+70-E60	09/29/05	732,598.27	2,470,528.86	na	Sept/Oct. Step-Out	2.2
RJ-247+90-E20	11/11/05	732,613.81	2,470,482.83	na	Nov. Step-Out	4.0
RJ-249+00-W10	09/14/05	732,710.16	2,470,470.79	818.9	Original Point	2.0
RJ-249+40-N10	09/14/05	732,760.19	2,470,469.20	818.4	Original Point	2.0
RJ-249+40-N40	09/30/05	732,789.30	2,470,476.46	na	Sept/Oct. Step-Out	1.9
RJ-249+40-S100	11/14/05	732,694.05	2,470,376.96	na	Nov. Step-Out	2.0
RJ-249+40-S50	09/14/05	732,699.45	2,470,426.65	818.6	Original Point	1.5
RJ-249+40-S80	09/30/05	732,696.84	2,470,396.77	na	Sept/Oct. Step-Out	2.4
RK-251+10-N10	09/14/05	732,834.78	2,470,358.85	818.4	Original Point	2.75
RK-251+10-N20	09/14/05	732,843.88	2,470,362.16	818.7	Original Point	2.0
RK-251+10-N50	09/14/05	732,872.86	2,470,372.73	820.0	Original Point	2.0
RK-251+10-S20	09/15/05	732,790.82	2,470,355.46	819.0	Original Point	2.25
RK-251+10-S50	09/30/05	732,760.93	2,470,352.85	na	Sept/Oct. Step-Out	1.9
RK-253+30-N100	09/15/05	732,940.51	2,470,158.55	819.9	Original Point	1.75
RK-253+30-S20	09/15/05	732,803.81	2,470,068.81	817.6	Original Point	2.0
RK-253+30-S40	09/30/05	732,784.12	2,470,065.34	na	Sept/Oct. Step-Out	1.5
RK-254+80-S15	09/15/05	732,804.01	2,469,992.23	818.8	Original Point	2.0
RK-254+80-S5	09/15/05	732,809.14	2,470,001.43	818.4	Original Point	1.6
RK-254+80-S50	09/15/05	732,773.36	2,469,960.64	820.8	Original Point	2.0
RK-256+00-E10	09/30/05	732,882.75	2,469,982.50	na	Sept/Oct. Step-Out	2.0
RK-256+00-E70	09/30/05	732,942.42	2,469,988.77	na	Sept/Oct. Step-Out	2.0
RK-257+00-E10	09/15/05	732,990.82	2,469,880.24	818.1	Original Point	2.0
RK-257+00-E120	09/30/05	733,021.98	2,469,997.13	na	Sept/Oct. Step-Out	2.0
RK-257+00-E90	09/15/05	733,015.74	2,469,967.79	818.7	Original Point	2.3
RK-258+00-W10	09/15/05	733,071.18	2,469,873.95	818.5	Original Point	2.0
RK-258+00-W60	09/15/05	733,091.11	2,469,823.97	819.8	Original Point	1.0
RK-261+10-W10	09/15/05	733,214.82	2,469,699.16	818.5	Original Point	2.5
RK-261+10-W25	09/15/05	733,209.92	2,469,686.65	819.4	Original Point	2.0
RK-261+10-W50	09/15/05	733,204.86	2,469,656.12	821.2	Original Point	0.5
RK-263+80-S10	09/15/05	733,420.20	2,469,560.60	818.1	Original Point	2.3
RK-263+80-S30	09/15/05	733,402.70	2,469,543.88	818.4	Original Point	1.0
RK-265+00-E10	09/15/05	733,554.64	2,469,551.54	817.0	Original Point	2.0
RK-265+00-E30	09/15/05	733,558.22	2,469,573.90	818.5	Original Point	1.5
RK-265+00-E50	09/30/05	733,557.52	2,469,593.89	na	Sept/Oct. Step-Out	2.0
RK-265+00-W10	09/15/05	733,552.42	2,469,518.47	818.0	Original Point	1.75
RK-265+00-W30	09/15/05	733,550.15	2,469,492.60	818.0	Original Point	2.5
RK-265+00-W50	09/30/05	733,552.94	2,469,472.79	na	Sept/Oct. Step-Out	2.0
RL-267+00-W100	09/15/05	733,679.50	2,469,373.68	818.0	Original Point	1.0
RL-267+40-E10	09/30/05	733,732.95	2,469,489.74	na	Sept/Oct. Step-Out	1.9
RL-267+40-E30	09/30/05	733,733.79	2,469,499.17	na	Sept/Oct. Step-Out	2.2
RL-268+70-E10	09/15/05	733,789.20	2,469,389.90	817.9	Original Point	2.25
RL-268+70-E30	09/15/05	733,771.71	2,469,376.12	817.7	Original Point	2.0
RL-268+70-E60	09/30/05	733,808.48	2,469,412.88	na	Sept/Oct. Step-Out	2.5
RL-268+70-W10	09/15/05	733,744.87	2,469,347.31	818.1	Original Point	2.0
RL-268+70-W30	10/03/05	733,731.49	2,469,332.45	na	Sept/Oct. Step-Out	2.5
RL-270+00-W10	10/03/05	733,905.88	2,469,357.90	na	Sept/Oct. Step-Out	2.0
RL-270+00-W80	10/03/05	733,947.56	2,469,324.82	na	Sept/Oct. Step-Out	2.25
RL-272+00-E100	09/15/05	734,048.60	2,469,520.97	818.3	Original Point	3.0
RL-272+00-E20	09/15/05	734,048.91	2,469,431.91	818.9	Original Point	2.0
RL-272+00-W10	09/15/05	734,028.56	2,469,397.76	817.9	Original Point	2.0

Table 3. Overbank Sampling Location Summary
HARP OU2/L & OU3

Sampling Point	Date	Northing	Easting	Elevation	Original Point or Step-Out	Sampling Depth
		(State Plane - ft)		(NAVD - ft)		(ft)
RL-272+00-W40	10/03/05	734,008.88	2,469,375.12	na	Sept/Oct. Step-Out	2.0
RL-274+40-S10	09/16/05	734,173.08	2,469,242.27	817.4	Original Point	2.25
RL-274+40-S30	09/16/05	734,150.52	2,469,231.67	818.5	Original Point	1.5
RL-275+80-E10	09/15/05	734,322.37	2,469,300.42	816.9	Original Point	2.5
RL-275+80-E40	09/30/05	734,298.73	2,469,318.89	na	Sept/Oct. Step-Out	2.2
RL-277+70-E20	09/15/05	734,471.47	2,469,350.19	817.4	Original Point	2.3
RL-277+70-W10	09/16/05	734,428.24	2,469,330.36	816.8	Original Point	2.5
RL-277+70-W40	09/16/05	734,397.22	2,469,309.30	818.1	Original Point	2.0
RL-278+00-W100	09/16/05	734,417.98	2,469,254.17	818.5	Original Point	2.0
RL-279+50-E100	09/15/05	734,619.99	2,469,371.39	817.3	Original Point	2.75
RL-280+10-E10	09/16/05	734,682.17	2,469,221.47	818.2	Original Point	2.75
RL-280+10-E30	09/16/05	734,697.05	2,469,239.68	818.0	Original Point	2.5
RL-280+10-W15	09/16/05	734,649.65	2,469,198.43	817.2	Original Point	2.25
RL-280+10-W30	09/16/05	734,632.42	2,469,188.11	818.0	Original Point	1.75
RL-280+10-W5	09/16/05	734,660.53	2,469,202.11	816.6	Original Point	2.25
RL-281+80-S15	09/16/05	734,694.25	2,469,081.95	817.2	Original Point	2.0
RL-281+80-S40	09/16/05	734,673.14	2,469,109.90	817.7	Original Point	2.0
RL-281+90-S5	09/16/05	734,704.55	2,469,068.05	817.3	Original Point	1.5
RL-282+50-N20	09/16/05	734,704.95	2,469,001.41	817.9	Original Point	2.0
RL-282+50-N40	10/03/05	734,724.84	2,469,003.50	na	Sept/Oct. Step-Out	1.5
RL-282+50-S10	10/03/05	734,650.25	2,469,000.72	na	Sept/Oct. Step-Out	1.5
RL-282+50-S30	11/14/05	734,630.25	2,469,000.72	na	Nov. Step-Out	2.0
RM-285+50-E30	09/16/05	734,798.54	2,468,809.97	817.5	Original Point	1.75
RM-285+50-E5	09/16/05	734,795.33	2,468,785.60	816.5	Original Point	2.0
RM-285+50-W25	09/16/05	734,791.97	2,468,743.04	818.3	Original Point	2.0
RM-285+50-W5	09/16/05	734,793.63	2,468,758.02	818.1	Original Point	2.25
RM-287+50-E15	09/20/05	735,064.77	2,468,785.83	817.4	Original Point	2.0
RM-287+50-W30	09/19/05	735,035.66	2,468,725.94	817.2	Original Point	2.0
RM-287+50-W5	09/19/05	735,047.79	2,468,751.71	816.5	Original Point	2.0
RM-287+50-W50	10/03/05	735,025.96	2,468,708.44	na	Sept/Oct. Step-Out	2.25
RM-289+00-W10	09/19/05	735,133.93	2,468,699.33	817.8	Original Point	2.0
RM-289+00-W40	10/03/05	735,122.21	2,468,671.72	na	Sept/Oct. Step-Out	2.0
RM-290+00-E100	09/20/05	735,229.65	2,468,811.11	816.7	Original Point	2.0
RM-290+00-W100	09/19/05	735,217.10	2,468,580.56	816.8	Original Point	2.5
RM-292+30-N10	09/19/05	735,424.73	2,468,815.42	817.4	Original Point	2.0
RM-292+30-N40	10/03/05	735,441.51	2,468,840.29	na	Sept/Oct. Step-Out	2.25
RM-292+30-S10	09/19/05	735,399.51	2,468,783.39	817.5	Original Point	2.0
RM-292+30-S40	09/19/05	735,378.54	2,468,758.21	817.4	Original Point	2.75
RM-292+30-S80	09/19/05	735,355.81	2,468,732.81	817.1	Original Point	2.0
RM-293+30-N10	09/19/05	735,442.06	2,468,687.64	817.7	Original Point	2.0
RM-293+30-N40	10/03/05	735,471.29	2,468,680.89	na	Sept/Oct. Step-Out	2.0
RM-293+30-S10	09/19/05	735,408.43	2,468,706.49	816.9	Original Point	2.0
RM-293+30-S30	09/19/05	735,382.82	2,468,717.98	816.1	Original Point	2.5
RM-294+20-S10	10/03/05	735,383.62	2,468,619.98	na	Sept/Oct. Step-Out	2.25
RM-294+20-S30	10/03/05	735,361.40	2,468,621.65	na	Sept/Oct. Step-Out	2.75
RM-296+50-E20	09/19/05	735,480.97	2,468,419.92	816.7	Original Point	2.0
RM-296+50-E50	10/03/05	735,499.44	2,468,443.56	na	Sept/Oct. Step-Out	2.25
RM-296+50-W10	09/19/05	735,439.79	2,468,379.99	817.6	Original Point	1.5
RM-296+50-W40	09/19/05	735,415.47	2,468,357.64	816.6	Original Point	2.25
RM-296+50-W60	10/03/05	735,401.33	2,468,343.50	na	Sept/Oct. Step-Out	2.25
RM-297+90-E10	09/19/05	735,553.83	2,468,381.09	816.8	Original Point	2.0
RM-297+90-E25	09/19/05	735,558.41	2,468,393.75	817.0	Original Point	2.5
RM-297+90-E50	10/03/05	735,565.30	2,468,417.78	na	Sept/Oct. Step-Out	2.0
RM-298+00-W120	10/03/05	735,493.05	2,468,233.88	na	Sept/Oct. Step-Out	2.0

Table 4. In-Channel Analytical Results Summary
HARP OU2/L & OU3

Sample Location and Depth (Inches)	Sample Date	Percent Solids	PCB Aroclors (mg/kg)							Total PCBs (mg/kg)
			1016	1221	1232	1242	1248	1254	1260	
RK-252+50-IC 6 - 8	10/04/05	66.4	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
RK-254+80-IC 0 - 6	08/24/05	34.8	< 0.076	< 0.076	< 0.076	< 0.076	0.700	2.400	0.640	3.700
RK-254+80-IC 6 - 9	08/24/05	44.8	< 0.059	< 0.059	< 0.059	< 0.059	< 0.059	< 0.059	< 0.059	< 0.059
RK-257+00-IC 0 - 3	08/24/05	50.5	< 0.053	< 0.053	< 0.053	< 0.053	0.380	0.960	0.240	1.600
RK-257+00-IC 3 - 8	08/24/05	47.0	< 0.280	< 0.280	< 0.280	< 0.280	1.100	0.610 Q	0.290 Q	2.000
RK-257+00-IC 8 - 10	08/24/05	72.4	< 0.073	< 0.073	< 0.073	< 0.073	< 0.073	0.530	0.100 Q	0.630
RK-259+00-IC 0 - 5	08/24/05	28.1	< 0.094	< 0.094	< 0.094	< 0.094	0.380	1.600	0.460	2.400
RK-259+00-IC 5 - 18	08/24/05	38.0	< 0.070	< 0.070	< 0.070	< 0.070	< 0.070	0.070 Q	< 0.070	0.070 Q
RK-263+50-IC 0 - 6	08/23/05	40.5	< 0.066	< 0.066	< 0.066	< 0.066	< 0.066	0.880	0.200 Q	1.100
RK-263+50-IC 6 - 8	08/23/05	48.4	< 0.055	< 0.055	< 0.055	< 0.055	< 0.055	< 0.055	< 0.055	< 0.055
RK-265+00-IC 0 - 7	08/23/05	52.1	< 0.051	< 0.051	< 0.051	< 0.051	< 0.051	1.400	0.360	1.800
RK-265+00-IC 7 - 17	08/23/05	37.6	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	0.084 Q	< 0.071	0.084 Q
RL-266+40-IC 0 - 7	08/23/05	46.3	< 0.057	< 0.057	< 0.057	< 0.057	< 0.057	0.620	0.150 Q	0.770
RL-266+40-IC 7 - 9	08/23/05	69.2	< 0.038	< 0.038	< 0.038	< 0.038	< 0.038	0.076 Q	< 0.038	0.076 Q
RL-268+70-IC 0 - 7	08/23/05	39.4	< 0.067	< 0.067	< 0.067	< 0.067	< 0.067	0.640	0.150 Q	0.790
RL-268+70-IC 7 - 14	08/23/05	47.3	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
RL-272+00-IC 0 - 2	08/23/05	63.8	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	0.410	0.094 Q	0.510
RL-272+00-IC 2 - 8	08/23/05	68.6	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	0.240	0.055 Q	0.300
RL-277+70-IC 0 - 8	08/23/05	58.8	< 0.045	< 0.045	< 0.045	< 0.045	< 0.045	0.580	0.120 Q	0.700
RL-277+70-IC 8 - 10	08/23/05	69.7	< 0.038	< 0.038	< 0.038	< 0.038	< 0.038	0.088 Q	< 0.038	0.088 Q
RL-282+00-IC 0 - 10	08/23/05	64.3	< 0.041	< 0.041	< 0.041	< 0.041	< 0.041	1.300	0.270	1.600
RM-287+50-IC 0 - 6	08/23/05	na	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	0.750	0.160	0.910
RM-287+50-IC 6 - 12	08/23/05	61.2	< 0.043	< 0.043	< 0.043	< 0.043	< 0.043	< 0.043	< 0.043	< 0.043
RM-290+00-IC 0 - 7	08/23/05	57.7	< 0.046	< 0.046	< 0.046	< 0.046	< 0.046	0.650	0.140 Q	0.790
RM-293+30-IC 0 - 8	08/23/05	44.8	< 0.059	< 0.059	< 0.059	< 0.059	< 0.059	0.900	0.190 Q	1.100
RM-293+30-IC 8 - 11	08/23/05	78.9	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034
RM-295+40-IC 0 - 7	08/23/05	58.4	< 0.045	< 0.045	< 0.045	< 0.045	< 0.045	1.200	0.250	1.500
RM-295+40-IC 7 - 12	08/23/05	56.1	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047
RM-298+50-IC 0 - 11	08/23/05	50.3	< 0.053	< 0.053	< 0.053	< 0.053	< 0.053	0.380	0.088 Q	0.470
RN-304+50-IC 0 - 7	08/23/05	38.3	< 0.069	< 0.069	< 0.069	< 0.069	< 0.069	1.100	0.310	1.400
RN-304+50-IC 7 - 15	08/23/05	49.0	< 0.054	< 0.054	< 0.054	< 0.054	< 0.054	0.076 Q	< 0.054	0.076 Q
RN-307+60-IC 0 - 10	08/23/05	42.1	< 0.063	< 0.063	< 0.063	< 0.063	< 0.063	1.300	0.340	1.600
RN-311+60-IC 0 - 8	08/23/05	56.4	< 0.047	< 0.047	< 0.047	< 0.047	< 0.047	0.800	0.180	0.980
RN-311+60-IC 8 - 10	08/23/05	77.9	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	0.060 Q	< 0.034	0.060 Q
RN-314+00-IC 0 - 11	08/23/05	52.4	< 0.051	< 0.051	< 0.051	< 0.051	< 0.051	1.500	0.260	1.800
RN-317+00-IC 0 - 8	08/23/05	28.8	< 0.092	< 0.092	< 0.092	< 0.092	< 0.092	1.200	0.300 Q	1.500
RO-319+60-IC 0 - 9	08/23/05	32.9	< 0.081	< 0.081	< 0.081	< 0.081	< 0.081	1.700	0.450	2.100
RO-319+60-IC 9 - 12	08/23/05	74.7	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	0.075 Q	< 0.036	0.075 Q
RO-323+20-IC 0 - 6	08/23/05	25.7	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	2.500	0.570	3.100
RO-323+20-IC 6 - 9	08/23/05	60.9	< 0.044	< 0.044	< 0.044	< 0.044	< 0.044	0.210	0.047 Q	0.260
RO-326+00-IC 0 - 14	08/23/05	45.8	< 0.058	< 0.058	< 0.058	< 0.058	< 0.058	0.260	< 0.058	0.260
RO-327+70-IC 0 - 6	08/23/05	27.8	< 0.095	< 0.095	< 0.095	< 0.095	< 0.095	1.200	0.320 Q	1.500

Table 5. Overbank Analytical Results Summary
HARP OU2/L & OU3

Sample Location and Depth (Inches)	Sample Date	Percent Solids	PCB Aroclors (mg/kg)							Total PCBs (mg/kg)
			1016	1221	1232	1242	1248	1254	1260	
RK-258+00-W60 0 - 6	09/15/05	43.4	< 0.061	< 0.061	< 0.061	< 0.061	< 0.061	0.130 Q	< 0.061	0.130 Q
RG-260+30-S50 0 - 6	09/12/05	77.6	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034
RK-261+10-W10 0 - 6	09/15/05	37.5	< 0.071	< 0.071	< 0.071	< 0.071	< 0.071	0.620	0.250	0.870
RK-261+10-W25 0 - 6	09/15/05	32.1	< 0.083	< 0.083	< 0.083	< 0.083	< 0.083	0.087 Q	< 0.083	0.087 Q
RK-261+10-W50 0 - 6	09/15/05	77.0	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	0.064 Q	< 0.034	0.064 Q
RK-263+80-S10 0 - 6	09/15/05	59.3	< 0.900	< 0.900	< 0.900	< 0.900	< 0.900	10.000	3.900	14.000
RK-263+80-S10 6 - 12	09/15/05	49.6	< 2.100	< 2.100	< 2.100	< 2.100	< 2.100	25.000	5.800 Q	31.000
RK-263+80-S10 12 - 24	09/15/05	45.2	< 2.900	< 2.900	< 2.900	< 2.900	< 2.900	29.000	6.700 Q	36.000
RK-263+80-S10 24 - 28	09/15/05	75.0	< 1.800	< 1.800	< 1.800	< 1.800	< 1.800	14.000	2.700 Q	16.000
RK-263+80-S30 0 - 6	09/15/05	58.2	< 0.091	< 0.091	< 0.091	< 0.091	< 0.091	1.500	0.500	2.000
RK-263+80-S30 6 - 12	09/15/05	61.5	< 0.043	< 0.043	< 0.043	< 0.043	< 0.043	0.550	0.140 Q	0.690
RK-265+00-E10 0 - 6	09/15/05	51.3	< 1.000	< 1.000	< 1.000	< 1.000	< 1.000	13.000	3.600	16.000
RK-265+00-E10 6 - 12	09/15/05	48.5	< 2.700	< 2.700	< 2.700	< 2.700	< 2.700	32.000	7.700 Q	40.000
RK-265+00-E10 12 - 24	09/15/05	50.2	< 0.053	< 0.053	< 0.053	< 0.053	< 0.053	0.370	0.095 Q	0.460
RK-265+00-E30 0 - 6	09/15/05	65.9	< 0.280	< 0.280	< 0.280	< 0.280	< 0.280	3.800	1.300	5.100
RK-265+00-E30 6 - 12	09/15/05	73.0	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	0.120 Q	< 0.036	0.120 Q
RK-265+00-E50 0 - 6	09/30/05	64.5	< 0.082	< 0.082	< 0.082	< 0.082	< 0.082	0.820	0.200 Q	1.000
RK-265+00-W10 0 - 6	09/15/05	67.3	< 0.790	< 0.790	< 0.790	< 0.790	< 0.790	13.000	3.300	16.000
RK-265+00-W10 6 - 12	09/15/05	61.0	< 0.220	< 0.220	< 0.220	< 0.220	< 0.220	2.300	0.510 Q	2.800
RK-265+00-W10 12 - 21	09/15/05	52.7	< 0.250	< 0.250	< 0.250	< 0.250	< 0.250	2.700	0.610 Q	3.300
RK-265+00-W30 0 - 6	09/15/05	58.9	< 0.270	< 0.270	< 0.270	< 0.270	< 0.270	3.500	1.000	4.600
RK-265+00-W30 6 - 12	09/15/05	58.9	< 0.045	< 0.045	< 0.045	< 0.045	< 0.045	0.150 Q	< 0.045	0.150 Q
RK-265+00-W50 0 - 6	09/30/05	42.1	< 0.063	< 0.063	< 0.063	< 0.063	< 0.063	0.220	< 0.063	0.220
RL-267+00-W100 0 - 6	09/15/05	55.1	< 0.240	< 0.240	< 0.240	< 0.240	< 0.240	3.000	1.100	4.100
RL-267+00-W100 6 - 12	09/15/05	68.5	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039
RL-267+40-E10 0 - 6	09/30/05	46.4	< 2.900	< 2.900	< 2.900	< 2.900	< 2.900	17.000	3.900 Q	21.000
RL-267+40-E10 6 - 12	09/30/05	65.0	< 0.410	< 0.410	< 0.410	< 0.410	< 0.410	4.400 B	1.000 Q	5.500
RL-267+40-E10 12 - 18	09/30/05	69.0	< 0.038	< 0.038	< 0.038	< 0.038	< 0.038	0.220 B	0.056 Q	0.280
RL-267+40-E30 0 - 6	09/30/05	52.9	< 0.050	< 0.050	< 0.050	< 0.050	< 0.050	0.069 Q	< 0.050	0.069 Q
RL-268+70-E10 0 - 6	09/15/05	62.8	< 2.100	< 2.100	< 2.100	< 2.100	< 2.100	30.000	6.800 Q	37.000
RL-268+70-E10 6 - 12	09/15/05	60.3	< 0.880	< 0.880	< 0.880	< 0.880	< 0.880	14.000	3.200	17.000
RL-268+70-E10 12 - 27	09/15/05	68.8	< 0.120	< 0.120	< 0.120	< 0.120	< 0.120	1.500	0.360 Q	1.800
RL-268+70-E30 0 - 6	09/15/05	72.3	< 0.550	< 0.550	< 0.550	< 0.550	< 0.550	7.200	1.900	9.100
RL-268+70-E30 6 - 12	09/15/05	69.2	< 0.038	< 0.038	< 0.038	< 0.038	< 0.038	0.510	0.150	0.670
RL-268+70-E60 0 - 6	09/30/05	60.2	< 0.130	< 0.130	< 0.130	< 0.130	< 0.130	1.200	0.240 Q	1.500
RL-268+70-W10 0 - 6	09/15/05	59.2	< 0.310	< 0.310	< 0.310	< 0.310	< 0.310	4.400	1.500	5.900
RL-268+70-W10 6 - 12	09/15/05	61.7	< 0.043	< 0.043	< 0.043	< 0.043	< 0.043	0.071 Q	< 0.043	0.071 Q
RL-268+70-W30 0 - 6	10/03/05	52.2	< 0.100	< 0.100	< 0.100	< 0.100	< 0.100	0.960	0.280 Q	1.200
RL-270+00-W10 0 - 6	10/03/05	67.5	< 0.390	< 0.390	< 0.390	< 0.390	< 0.390	2.800	0.760 Q	3.600
RL-270+00-W80 0 - 6	10/03/05	62.7	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	0.089 Q	< 0.042	0.089 Q
RL-272+00-E100 0 - 6	09/15/05	77.4	< 0.140	< 0.140	< 0.140	< 0.140	< 0.140	1.800	0.630	2.400
RL-272+00-E100 6 - 12	09/15/05	81.0	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	0.095 Q	0.035 Q	0.130

Table 5. Overbank Analytical Results Summary
HARP OU2/L & OU3

Sample Location and Depth (Inches)	Sample Date	Percent Solids	PCB Aroclors (mg/kg)							Total PCBs (mg/kg)
			1016	1221	1232	1242	1248	1254	1260	
RL-272+00-E20 0 - 6	09/15/05	78.4	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	0.200	0.230	0.430
RL-272+00-W10 0 - 6	09/15/05	71.3	< 0.560	< 0.560	< 0.560	< 0.560	< 0.560	7.100	2.100	9.200
RL-272+00-W10 6 - 12	09/15/05	69.9	< 0.038	< 0.038	< 0.038	< 0.038	< 0.038	0.560	0.150	0.720
RL-272+00-W40 0 - 6	10/03/05	61.8	< 0.043	< 0.043	< 0.043	< 0.043	< 0.043	0.280	0.094 Q	0.370
RL-274+40-S10 0 - 6	09/16/05	69.4	< 0.110	< 0.110	< 0.110	< 0.110	< 0.110	1.700	0.340 Q	2.000
RL-274+40-S30 0 - 6	09/16/05	74.4	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	0.052 Q	< 0.036	0.052 Q
RL-275+80-E10 0 - 6	09/15/05	63.4	< 0.630	< 0.630	< 0.630	< 0.630	< 0.630	6.100	2.200	8.300
RL-275+80-E10 6 - 12	09/15/05	57.4	< 1.900	< 1.900	< 1.900	< 1.900	< 1.900	19.000	5.500 Q	25.000
RL-275+80-E10 12 - 30	09/15/05	73.7	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036
RL-275+80-E40 0 - 6	09/30/05	63.3	< 0.042	< 0.042	< 0.042	< 0.042	< 0.042	0.260	0.053 Q	0.310
RL-277+70-E20 0 - 6	09/15/05	65.6	< 0.200	< 0.200	< 0.200	< 0.200	< 0.200	2.700	0.700	3.400
RL-277+70-E20 6 - 12	09/15/05	59.2	< 0.045	< 0.045	< 0.045	< 0.045	< 0.045	0.260	0.086 Q	0.350
RL-277+70-W10 0 - 6	09/16/05	55.0	< 0.960	< 0.960	< 0.960	< 0.960	< 0.960	9.000	2.400 Q	11.000
RL-277+70-W10 6 - 12	09/16/05	43.9	< 2.400	< 2.400	< 2.400	< 2.400	< 2.400	22.000	6.400 Q	29.000
RL-277+70-W10 12 - 24	09/16/05	41.9	< 0.320	< 0.320	< 0.320	< 0.320	< 0.320	2.400	0.680 Q	3.100
RL-277+70-W40 0 - 6	09/16/05	73.6	< 0.180	< 0.180	< 0.180	< 0.180	< 0.180	2.600	0.590 Q	3.200
RL-278+00-W100 0 - 6	09/16/05	73.7	< 0.036	< 0.036	< 0.036	< 0.036	< 0.036	0.160	0.036 Q	0.190
RL-279+50-E100 0 - 6	09/15/05	58.2	< 0.091	< 0.091	< 0.091	< 0.091	< 0.091	1.500	0.440	1.900
RL-280+10-E10 0 - 6	09/16/05	69.0	< 0.120	< 0.120	< 0.120	< 0.120	< 0.120	1.700	0.360 Q	2.000
RL-280+10-E30 0 - 6	09/16/05	70.1	< 0.038	< 0.038	< 0.038	< 0.038	< 0.038	0.280	0.055 Q	0.330
RL-280+10-W15 0 - 6	09/16/05	70.0	< 1.100	< 1.100	< 1.100	< 1.100	< 1.100	12.000	2.900 Q	15.000
RL-280+10-W15 6 - 12	09/16/05	67.6	< 0.079	< 0.079	< 0.079	< 0.079	< 0.079	0.980	0.210 Q	1.200
RL-280+10-W30 0 - 6	09/16/05	73.8	< 0.180	< 0.180	< 0.180	< 0.180	< 0.180	2.300	0.530 Q	2.800
RL-280+10-W5 0 - 6	09/16/05	50.0	< 0.800	< 0.800	< 0.800	< 0.800	< 0.800	7.000	1.900 Q	9.000
RL-280+10-W5 6 - 12	09/16/05	43.1	< 0.310	< 0.310	< 0.310	< 0.310	< 0.310	5.900	1.600	7.500
RL-280+10-W5 12 - 18	09/16/05	64.9	< 0.120	< 0.120	< 0.120	< 0.120	< 0.120	1.500	0.440	1.900
RL-281+80-S15 0 - 6	09/16/05	63.2	< 1.700	< 1.700	< 1.700	< 1.700	< 1.700	21.000	4.100 Q	25.000
RL-281+80-S15 6 - 12	09/16/05	63.7	< 0.083	< 0.083	< 0.083	< 0.083	< 0.083	1.200	0.240 Q	1.400
RL-281+80-S40 0 - 6	09/16/05	70.5	< 0.110	< 0.110	< 0.110	< 0.110	< 0.110	1.600	0.330 Q	1.900
RL-281+90-S5 0 - 6	09/16/05	62.8	< 0.850	< 0.850	< 0.850	< 0.850	< 0.850	8.100	2.100 Q	10.000
RL-281+90-S5 6 - 12	09/16/05	58.0	< 1.400	< 1.400	< 1.400	< 1.400	< 1.400	14.000	3.100 Q	17.000
RL-281+90-S5 12 - 18	09/16/05	57.0	< 1.900	< 1.900	< 1.900	< 1.900	< 1.900	20.000	4.800 Q	25.000
RL-282+50-N20 0 - 6	09/16/05	66.8	< 0.240	< 0.240	< 0.240	< 0.240	< 0.240	3.400	0.710 Q	4.100
RL-282+50-N40 0 - 6	10/03/05	72.7	< 0.037	< 0.037	< 0.037	< 0.037	< 0.037	0.065 Q	< 0.037	0.065 Q
RL-282+50-S10 0 - 6	10/03/05	70.1	< 0.380	< 0.380	< 0.380	< 0.380	< 0.380	4.800	1.200 Q	6.000
RL-282+50-S10 6 - 12	10/03/05	78.0	< 0.034	< 0.034	< 0.034	< 0.034	< 0.034	0.080 Q	0.040 Q	0.120
RL-282+50-S30 0 - 6	11/14/05	68.0	< 0.039	< 0.039	< 0.039	< 0.039	< 0.039	0.088 Q	< 0.039	0.088 Q
RL-282+50-S30 6 - 12	11/14/05	79.8	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033
RL-282+50-S30 12 - 24	11/14/05	81.5	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033	< 0.033
RM-285+50-E30 0 - 6	09/16/05	71.0	< 0.260	< 0.260	< 0.260	< 0.260	< 0.260	3.500	0.590 Q	4.100
RM-285+50-E5 0 - 6	09/16/05	49.4	< 0.810	< 0.810	< 0.810	< 0.810	< 0.810	9.000	2.300 Q	11.000
RM-285+50-E5 6 - 12	09/16/05	55.3	< 0.240	< 0.240	< 0.240	< 0.240	< 0.240	3.000	0.770 Q	3.800

Table 6. Historic Sediment Analytical Results
HARP OU2/L & OU3

Location	Total PCBs (mg/kg)
RE-122+90-IC-RS	3.300
RE-124+00-IC-RS	2.100
RE-126+60-IC	2.100
RF-131+50-OXBOW	6.600
RF-147+50-IC	3.400
RF-150+00-IC	7.700
RF-ST4-IC	2.500
RF-156+20-IC	5.300
RG-172+50-IC	5.200
RG-180+10-IC	2.100
RG-183+00-IC-RS	7.000
RG-191+50-IC-RS	2.000
RG-198+00-IC-RS	2.000
RG-202+50-IC-RS	3.900
RG-205+00-IC-RS	5.800
RI-220+00-IC	9.700
RI-225+00-IC	6.500
RI-229+00-IC	8.900
RJ-233+00-IC	20.000
RJ-238+60-IC	0.120
RJ-245+00-IC-RS	1.600
RK-254+50-IC-RS	8.000
RK-261+00-IC-RS	0.750
RK-265+50-IC-RS	5.600
RL-270+00-IC-RS	0.070
RL-275+80-IC-RS	0.050
RL-279+00-IC-RS	1.100
RM-285+00-IC-RS	0.090
RM-291+00-IC-RS	4.100
RM-296+90-IC-RS	2.500
RM-302+70-IC-RS	1.500
RN-308+80-IC-RS	3.800
RN-314+90-IC-RS	11.000
RO-320+80-IC-RS	1.300
RO-328+20-IC-RS	8.000
RO-330+20-IC-RS	5.300
RP-331+90-IC-RS	13.000
RP-337+90-IC-RS	4.600

Notes:

1) Historic sampling data collected by Earth Tech in 2003.

Table 9. Sample Replicate List and Results
HARP OU2/L and OU3

Lab Sample Number	Field ID	Total PCBs (mg/kg)	Collection Date	Matrix	Relative Percentage Difference[A]
863052-004	RP-331+70-IC 0-12	1.2	08/22/05	SEDIMENT	58%
863052-007	RP-331+70-IC 0-12R	0.66	08/22/05	SEDIMENT	
863052-025	RL-282+00-IC 0-10	1.6	08/23/05	SEDIMENT	69%
863052-026	RL-282+00-IC 0-10R	3.3	08/23/05	SEDIMENT	
863089-011	RJ-237+00-IC 0-10	3.3	08/24/05	SEDIMENT	3%
863089-012	RJ-237+00-IC 0-10R	3.4	08/24/05	SEDIMENT	
863089-021	RG-205+90-IC 0-10	2.3	08/24/05	SEDIMENT	36%
863089-022	RG-205+90-IC 0-10R	3.3	08/24/05	SEDIMENT	
863229-016	RE-125+90-N10 0-6	3.6	08/29/05	SOIL	3%
863229-015	RE-125+90-N10 0-6R	3.7	08/29/05	SOIL	
863273-009	RF-137+80-W10 0-6	29	08/30/05	SOIL	11%
863273-010	RF-137+80-W10 0-6R	26	08/30/05	SOIL	
863335-002	RF-137+80-W40 0-6	20	08/30/05	SOIL	58%
863335-004	RF-137+80-W40 0-6R	11	08/30/05	SOIL	
863335-011	RF-140+50-E50 0-6	32	08/31/05	SOIL	44%
863335-013	RF-140+50-E50 0-6R	50	08/31/05	SOIL	
863384-016	RF-151+00-E30 0-6	30	09/01/05	SOIL	NA
The laboratory did not receive sample RF-REP1-050901 (although it was listed on the COC).					
863449-005	RF-170+00-S70 0-6	38	09/02/05	SOIL	53%
863449-004	RF-REP2-050902	22	09/02/05	SOIL	
863503-002	RF-164+80-W170 0-6	12	09/06/05	SOIL	8%
863503-001	RF-REP3-050906	13	09/06/05	SOIL	
863551-004	RG-173+10-W60 0-6	5.3	09/07/05	SOIL	8%
863551-001	RG-REP4-050907	4.9	09/07/05	SOIL	
863606-005	RG-183+20-W10 0-6	5.5	09/08/05	SOIL	31%
863606-001	RG-REP5-050908	7.5	09/08/05	SOIL	
863663-005	RG-191+20-E40 0-6	2.1	09/08/05	SOIL	15%
863663-001	RG-REP6-050909	1.8	09/09/05	SOIL	
863719-009	RH-209+50-W50 0-6	<0.034	09/12/05	SOIL	3%
863719-016	RH-REP7-050912	<0.033	09/12/05	SOIL	
863719-022	RI-218+50-N10 0-6	17	09/12/05	SOIL	34%
863719-027	RI-REP7-050912	12	09/12/05	SOIL	
863790-005	RI-221+60-S25 0-6	1.6	09/13/05	SOIL	36%
863790-002	RI-REP8-050913	2.3	09/13/05	SOIL	
863790-027	RJ-233+00-S10 0-6	40	09/13/05	SOIL	0%
863790-031	RJ-REP8A-050913	40	09/13/05	SOIL	
863888-005	RJ-236+50-N30 0-6	25	09/14/05	SOIL	44%
863888-004	RJ-REP9-050914	16	09/14/05	SOIL	
863951-003	RK-257+00-E10 0-6	18	09/15/05	SOIL	6%
863951-002	RK-REP10-050915	17	09/15/05	SOIL	
864088-012	RL-281+90-S5 0-6	10	09/16/05	SOIL	10%
864088-020	RL-REP11-050916	11	09/16/05	SOIL	
864071-008	RM-289+00-W10 0-6	20	09/19/05	SOIL	114%
864071-002	RM-REP12-050919	5.5	09/19/05	SOIL	

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SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-266+40-IC

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	8/23/2005	8/23/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	815.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,626 N, 2,469,526 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 0.6' **ORGANIC SILT** : OL, very dark gray (7.5YR 3/1), nonplastic, no dilatency, low toughness, moist to wet, very soft, [gyttja], trace stems/ fibers/ wood pieces; 5% shells/ sand; organic odor.	OL								
				0.6 - 0.75' **LEAN CLAY** : CL, greenish gray (10Y 6/1), medium to high plasticity, no dilatency, low toughness, moist, very soft, 5% shells; trace sand.	CL								
				0.75' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

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Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-267+00-W100

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/15/2005	9/15/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	818.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,680 N, 2,469,374 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, dark brown (7.5YR 3/2), low plasticity, slow dilatency, low toughness, moist, very soft, trace roots/ fibers; organic odor.	ML								
			1.0	1' End of Boring.									

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Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-267+40-E10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/30/2005	9/30/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,733 N, 2,469,490 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **LEAN CLAY** : CL, very dark grayish brown (10YR 3/2), medium plasticity, no dilatency, medium toughness, moist, firm, 5% roots.	CL								
			1.0	1 - 1.9' **FAT CLAY** : CH, very dark grayish brown (10YR 3/2), high plasticity, no dilatency, high toughness, wet, very soft.	CH								
			1.5	1.9' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

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Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-267+40-E30

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/30/2005	9/30/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,734 N, 2,469,499 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, black (10YR 2/1), nonplastic, slow dilatency, low toughness, moist to wet, soft, 1% roots. 0.5' low plasticity from 0.5' to 1.0'.	ML								
			1.0 1.5 2.0	1 - 2.2' **LEAN CLAY** : CL, very dark grayish brown (10YR 3/2), medium plasticity, no dilatency, medium toughness, moist, firm, 5% wood fragments.	CL								
				2.2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

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SOIL BORING LOG INFORMATION

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Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-268+70-E10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/15/2005	9/15/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.9 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,789 N, 2,469,390 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	0 - 0.5' **SILT** : ML, dark brown (7.5YR 3/2), nonplastic, rapid dilatency, low toughness, moist, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML								
			0.5	0.5 - 2.25' **ELASTIC SILT** : MH, dark brown (7.5YR 3/2), medium plasticity, no dilatency, low toughness, moist, very soft, earthy odor.				0.5					
			1.0										
			1.5	1.5' black (2.5YR 2.5/1), trace shells/ sand/ wood fragments to 2.1'.	MH								
			2.0	2.1' dark gray (7.5YR 4/1), 1 wood piece; lean clay to 2.25'.									
				2.25' End of Boring.									

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SOIL BORING LOG INFORMATION

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Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-268+70-E30

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/15/2005	9/15/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.7 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,772 N, 2,469,376 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 2' **SILT** : ML, dark brown (7.5YR 3/2), nonplastic, rapid dilatency, low toughness, dry, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML								
			1.0										
			1.5										
			2.0	2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

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Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-268+70-E60

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/30/2005	9/30/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,808 N, 2,469,413 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1.2' **SILT** : ML, very dark brown (10YR 2/2), low plasticity, rapid dilatency, low toughness, moist, soft, 5% roots.	ML								
			1.0										
			1.5	1.25 - 2.5' **FAT CLAY** : CH, very dark brown (10YR 2/2), high plasticity, no dilatency, high toughness, moist, firm.	CH								
			2.0										
			2.5	2.5' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

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Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

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Department of Natural Resources

SOIL BORING LOG INFORMATION

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Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-268+70-IC

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	8/23/2005	8/23/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	814.7 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,743 N, 2,469,406 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 0.6' **ORGANIC SILT :** OL, very dark gray (7.5YR 3/1), nonplastic, no dilatency, low toughness, moist to wet, very soft, [gyttja], 5% fine sand/ shells; trace fibers/ wood fragments; organic odor.	OL								
			1.0	0.6 - 1.2' **ORGANIC SILT** to **ELASTIC SILT :** OL, very dark gray (7.5YR 3/1), low plasticity, no dilatency, low toughness, moist, very soft, trace fibers/ shells/ wood fragments; organic odor.	OL								
				1.2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
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SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-268+70-W10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/15/2005	9/15/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	818.1 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,745 N, 2,469,347 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, very dark gray (7.5YR 3/1), low plasticity, slow dilatency, low toughness, moist, very soft, trace roots/ fibers/ medium sand; earthy odor.	ML								
			1.0	1 - 2' **LEAN CLAY** : CL, dark brown (7.5YR 3/2), medium plasticity, no dilatency, medium toughness, moist, very soft, trace fibers.	CL			0.5					
			1.5	1.8' light brwon (7.5 YR 6/3).									
			2.0	2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
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Department of Natural Resources

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Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-268+70-W30

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	10/3/2005	10/3/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,731 N, 2,469,332 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, very dark gray (10YR 3/1), low plasticity, slow dilatency, low toughness, moist, very soft, trace roots/fibers/medium sand; 10% clay clumps.	ML								
			1.0					0.5					
			1.5	1 - 2.5' **LEAN CLAY** : CL, very dark grayish brown (10YR 3/2), medium plasticity, no dilatency, medium toughness, moist, very soft, trace roots/fibers/medium sand.	CL								
			2.0	2.25' brown (10YR 5/3), moist, very soft.				0.5					
			2.5	2.5' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-270+00-W10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	10/3/2005	10/3/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,906 N, 2,469,358 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 0.5' **SILT :** ML, very dark gray (10YR 3/1), low plasticity, slow dilatency, low toughness, moist, very soft, trace roots/fibers/medium sand; 10% clay clumps.	ML								
			1.0	0.5 - 1' **ELASTIC SILT :** MH, dark grayish brown (10YR 4/2), medium plasticity, no dilatency, low toughness, moist, very soft, trace roots/fibers.	MH			0.5					
			1.5	1 - 2' **LEAN CLAY :** CL, very dark grayish brown (10YR 3/2), medium plasticity, no dilatency, medium toughness, moist, very soft, trace roots/fibers/medium sand.	CL			0.5					
			2.0	2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-270+00-W80

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	10/3/2005	10/3/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 733,948 N, 2,469,325 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT :** ML, very dark gray (10YR 3/1), low plasticity, slow dilatency, low toughness, moist, very soft, trace roots/fibers/medium sand; 10% clay clumps.	ML			0.5					
			1.0	1 - 2.25' **LEAN CLAY :** CL, dark gray (10YR 4/1), medium plasticity, no dilatency, medium toughness, moist, firm, trace medium well sorted sand.	CL			1.5					
			1.5	1.5' 10% medium sand laminations.									
			2.0	2.25' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-272+00-E20

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/15/2005	9/15/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	818.9 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,049 N, 2,469,432 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, dark brown (7.5YR 3/2), nonplastic, rapid dilatency, low toughness, dry, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML								
			1.0	1 - 2' **LEAN CLAY** : CL, grayish brown (10YR 5/2), medium plasticity, no dilatency, medium toughness, dry to moist, soft, homogenous.	CL			1.5					
			1.5										
			2.0	2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-272+00-E100

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/15/2005	9/15/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	818.3 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,049 N, 2,469,521 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, dark brown (7.5YR 3/2), nonplastic, rapid dilatency, low toughness, dry, very soft, root material to 0.1'; trace roots/ fibers/ medium sand; earthy odor.	ML								
			1.0	1 - 3' **LEAN CLAY** : CL, grayish brown (10YR 5/2), medium plasticity, no dilatency, medium toughness, dry, firm, trace roots/ fibers/ medium sand.	CL			2					
			1.5	1.5' very dark gray (7.5 YR 3/1).									
			2.0										
			2.5										
			3.0	3' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-272+00-IC

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	8/23/2005	8/23/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	814.9 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,038 N, 2,469,413 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				0 - 0.2' **ORGANIC SILT WITH SAND :** (OL)s, poorly graded, fine grained sand, subrounded sand, greenish gray (10Y 6/1), nonplastic, rapid dilatency, low toughness, wet, very soft, [well sorted], 20% fine sand; trace fibers/ stems/ shells; organic odor.	(OL)s			0.5					
			0.5	0.2 - 0.7' **LEAN CLAY :** CL, pinkish gray (5YR 6/2), 5% greenish gray (5BG 6/1) mottling, medium plasticity, no dilatency, medium toughness, moist, very soft. 0.5' vertical organic silt with sand seam to 0.7'. 0.7' End of Boring.	CL								

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-272+00-W10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/15/2005	9/15/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.9 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,029 N, 2,469,398 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, dark brown (7.5YR 3/2), nonplastic, rapid dilatency, low toughness, dry to moist, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML								
			1.0					0.5					
			1.5	1 - 2' **ELASTIC SILT** : MH, gray (7.5YR 5/1), medium plasticity, no dilatency, low toughness, moist, very soft, trace fibers/ medium sand.	MH							
			2.0	1.9' gray lean clay to 2'. 2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-272+00-W40

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	10/3/2005	10/3/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,009 N, 2,469,375 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, very dark gray (10YR 3/1), low plasticity, slow dilatency, low toughness, moist, very soft, trace roots/fibers/medium sand; 10% clay clumps.	ML								
			1.0	1 - 2' **LEAN CLAY** : CL, dark gray (10YR 4/1), medium plasticity, no dilatency, medium toughness, moist, firm, trace medium well sorted sand.	CL								
			1.5	1.5' 10% medium sand laminations.									
			2.0	2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-274+40-S10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.4 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,173 N, 2,469,242 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT :** ML, very dark gray (7.5YR 3/1), nonplastic, rapid dilatency, low toughness, dry, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML								
			1.0	1 - 2.25' **LEAN CLAY WITH SAND :** (CL)s, poorly graded, medium grained sand, rounded sand, dark gray (7.5YR 4/1), medium plasticity, no dilatency, low toughness, moist, soft, [well sorted], 15% well sorted medium grained sand; trace shells/ fibers.	(CL)s			0.5					
			1.5										
			2.0	2.2' lean clay color is 7.5YR 5/4 brown with no sand to 2.25'.									
				2.25' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-274+40-S30

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	818.5 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,151 N, 2,469,232 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, dark brown (7.5YR 3/2), nonplastic, rapid dilatency, low toughness, dry, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML								
			1.0	1 - 1.5' **LEAN CLAY** : CL, gray (7.5YR 5/1), 5% very dark gray (7.5YR 3/1) mottling, medium plasticity, no dilatency, medium toughness, moist, soft, trace fibers/ roots/ medium sand.	CL			1					
			1.5	1.5' End of Boring.									

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Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-275+80-E10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/15/2005	9/15/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	816.9 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,322 N, 2,469,300 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT :** ML, very dark gray (7.5YR 3/1), low plasticity, slow dilatency, low toughness, moist, very soft, root material to 0.2'; trace roots/ fibers; earthy odor. 0.5' 10% fibers/ shells; trace stems/ medium sand to 1'.	ML								
			1.0	1 - 2.5' **LEAN CLAY :** CL, brown (7.5YR 5/2), 10% gray (7.5YR 6/1) mottling, medium plasticity, no dilatency, medium toughness, moist, soft, trace fibers.	CL			2					
			1.5										
			2.0										
			2.5	2.5' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
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SOIL BORING LOG INFORMATION

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Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-275+80-E40

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/30/2005	9/30/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,299 N, 2,469,319 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1.5' **SILT** : ML, very dark gray (10YR 3/1), low plasticity, no dilatency, low toughness, moist to wet, soft, 5% roots.	ML								
			1.0										
			1.5	1.5 - 2.2' **FAT CLAY** : CH, brown (10YR 4/3), high plasticity, no dilatency, high toughness, moist, hard.	CH								
			2.0	2.2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-277+70-E20

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/15/2005	9/15/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.4 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,471 N, 2,469,350 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT :** ML, very dark gray (7.5YR 3/1), low plasticity, slow dilatency, low toughness, moist, very soft, root material to 0.2'; trace roots/ fibers; earthy odor.	ML								
			1.0	1 - 2.3' **ELASTIC SILT :** MH, very dark gray (7.5YR 3/1), medium plasticity, no dilatency, low toughness, moist, very soft, trace fibers/ roots/ medium sand.	MH			0.5					
			1.5										
			2.0	2.3' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-277+70-IC

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	8/23/2005	8/23/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	814.5 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,441 N, 2,469,334 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 0.7' **ORGANIC SILT** : OL, very dark gray (7.5YR 3/1), nonplastic, no dilatency, low toughness, wet, very soft, [gyttja], trace fibers/ stems; organic odor. 0.25' 10% sand/ shells to 0.7'.	OL								
				0.7 - 0.8' **LEAN CLAY** : CL, pinkish gray (5YR 6/2), 5% greenish gray (5BG 6/1) mottling, medium plasticity, no dilatency, medium toughness, moist, very soft, <1% fibers. 0.8' End of Boring.	CL			0.5					

I hereby certify that the information on this form is true and correct to the best of my knowledge.

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Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-277+70-W10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	816.8 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,428 N, 2,469,330 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 0.5' **SILT** : ML, very dark gray (7.5YR 3/1), nonplastic, rapid dilatency, low toughness, dry, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML			0.5					
			1.0	0.5 - 2' **ELASTIC SILT** : MH, dark gray (7.5YR 4/1), medium plasticity, no dilatency, low toughness, moist, very soft, trace medium sand/ shells; 10% roots and fibers to 1'; organic odor.	MH								
			1.5										
			2.0	2 - 2.5' **LEAN CLAY** : CL, brown (7.5YR 5/3), 5% gray (7.5YR 5/1) mottling, medium plasticity, no dilatency, medium toughness, moist, firm, homogenous.	CL			2.5					
			2.5	2.5' End of Boring.									

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Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-277+70-W40

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	818.1 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,397 N, 2,469,309 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, very dark gray (7.5YR 3/1), low plasticity, rapid dilatency, low toughness, dry, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML								
			1.0	1 - 2' **ELASTIC SILT** : MH, dark gray (7.5YR 4/1), medium plasticity, no dilatency, low toughness, moist, very soft, trace roots/ fibers/ medium sand. 1.5' 10% medium sand to 1.9'.	MH			0.5					
			1.5										
			2.0	1.9' 1 poorly graded medium sand, rounded grains. 2' End of Boring.									

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Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-278+00-W100

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	818.5 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,418 N, 2,469,254 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT :** ML, very dark gray (7.5YR 3/1), nonplastic, rapid dilatency, low toughness, dry, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML								
			1.0	1 - 2' **FAT CLAY :** CH, dark gray (7.5YR 4/1), high plasticity, no dilatency, high toughness, dry, firm, trace roots/ fibers; crumbly texture.	CH			4.5					
			1.5										
			2.0	2' End of Boring.									

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Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-279+50-E100

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/15/2005	9/15/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.3 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,620 N, 2,469,371 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, very dark gray (7.5YR 3/1), low plasticity, slow dilatency, low toughness, moist, very soft, root material to 0.2'; trace roots/ fibers; earthy odor.	ML								
			1.0	1 - 2.75' **LEAN CLAY** : CL, light olive brown (2.5Y 5/3), 5% reddish yellow (7.5YR 6/6) mottling, medium plasticity, no dilatency, medium toughness, moist, soft, homogenous, trace fibers. 1.25' very dark gray (7.5 YR 3/1).	CL			1.5					
			1.5										
			2.0										
			2.5	2.75' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

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Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION
Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Page 1 of 1

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-280+10-E10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	818.2 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,682 N, 2,469,221 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, very dark gray (7.5YR 3/1), nonplastic, rapid dilatency, low toughness, dry, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML								
			1.0	1 - 2.75' **LEAN CLAY** : CL, greenish gray (10Y 5/1), medium plasticity, no dilatency, medium toughness, moist, very soft, trace fibers.	CL			0.5					
			1.5										
			2.0										
			2.5	2.25' light brown (7.5YR 6/3), 10% gray (7.5YR 6/1) mottling, mottled to 2.75'.									
				2.75' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

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Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-280+10-E30

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	818.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,697 N, 2,469,240 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 0.5' **SILT** : ML, very dark gray (7.5YR 3/1), nonplastic, rapid dilatency, low toughness, dry, very soft, root material to 0.2'; trace roots/ fibers/ medium sand; earthy odor.	ML			1					
			1.0	0.5 - 2.5' **LEAN CLAY** : CL, very dark gray (7.5YR 3/1), medium plasticity, no dilatency, medium toughness, dry to moist, soft, clay is dry to 1'; earthy odor. 1' grayish brown (2.5Y 5/2), moist, clay is grayish brown to 2'.	CL								
			2.0	2' light brown (7.5YR 6/3), 10% gray (7.5YR 6/1) mottling, moist, mottled to 2.5'.									
			2.5	2.5' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

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Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-280+10-W5

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Bamhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	816.6 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,661 N, 2,469,202 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1.5' **ELASTIC SILT** : MH, very dark gray (7.5YR 3/1), medium plasticity, no dilatency, low toughness, moist, very soft, 5% roots/fibers; trace medium sand..	MH			0.5					
			1.5	1.5 - 2.25' **LEAN CLAY** : CL, gray (7.5YR 5/1), medium plasticity, no dilatency, medium toughness, moist, very soft.	CL			1					
			2.0	2.25' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

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Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-280+10-W15

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.2 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,650 N, 2,469,198 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT :** ML, very dark brown (7.5YR 3/2), medium plasticity, rapid dilatency, low toughness, dry, very soft, 0-0.2 root mat; trace roots/fibers/medium sand.	ML								
			1.0	1 - 2.25' **ELASTIC SILT :** MH, very dark brown (7.5YR 3/2), low plasticity, no dilatency, low toughness, moist, very soft, @2-2.25' 10% medium brown sand.	MH			0.5					
			1.5										
			2.0	2.25' End of Boring.									

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Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-280+10-W30

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	818.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,632 N, 2,469,188 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5 1.0 1.5	0 - 1.75' **SILT** : ML, very dark brown (7.5YR 3/2), medium plasticity, rapid dilatency, low toughness, dry, very soft, 0-0.2 root mat; trace roots/fibers/medium sand.	ML								
				1.75' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-281+80-S15

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.2 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,694 N, 2,469,082 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	0 - 0.5' **SILT** : ML, very dark brown (7.5YR 3/2), medium plasticity, rapid dilatency, low toughness, dry, very soft, 0-0.2 root mat; trace roots/fibers/medium sand.	ML								
			0.5	0.5 - 2' **ELASTIC SILT** : MH, very dark brown (7.5YR 3/2), low plasticity, no dilatency, low toughness, moist, very soft, trace root fibers; fine granular soil texture..	MH								
			1.0										
			1.5										
			2.0	2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Hovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-281+80-S40

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.7 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,673 N, 2,469,110 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, very dark brown (7.5YR 3/2), medium plasticity, rapid dilatency, low toughness, dry, very soft, 0-0.2 root mat; trace roots/fibers/medium sand.	ML								
			1.0 1.5	1 - 2' **ELASTIC SILT** : MH, very dark brown (7.5YR 3/2), low plasticity, no dilatency, low toughness, moist, very soft, trace root fibers; fine granular soil texture..	MH								
			2.0	2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-281+90-S5

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.3 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,705 N, 2,469,068 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	0 - 0.5' **SILT** : ML, very dark brown (7.5YR 3/2), medium plasticity, rapid dilatency, low toughness, dry, very soft, 0-0.2 root mat; trace roots/fibers/medium sand.	ML			0.5					
			0.5	0.5 - 1.5' **ELASTIC SILT** : MH, very dark brown (7.5YR 3/2), low plasticity, no dilatency, low toughness, moist, very soft, trace root fibers; gray lean clay @ 1.4-1.5'.	MH								
			1.0										
			1.5	1.5' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-282+00-IC

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	8/23/2005	8/23/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	815.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,705 N, 2,469,149 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	0 - 0.8' **ORGANIC SILT WITH SAND :** (OL)s, poorly graded, fine grained sand, rounded sand, greenish gray (10Y 5/1), nonplastic, rapid dilatency, low toughness, moist to wet, very soft, [well sorted], 30% fine sand; trace fibers/ shells/ stems; organic odor.	(OL)s								
			0.5	0.75' Sand content increases at base; however, no sand recovered at 0.8'.									
				0.8' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-282+50-N20

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	9/16/2005	9/16/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	817.9 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,705 N, 2,469,001 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	0 - 0.5' **SILT** : ML, very dark brown (7.5YR 3/2), medium plasticity, rapid dilatency, low toughness, dry, very soft, 0-0.2 root mat; trace roots/fibers/medium sand.	ML								
			0.5	0.5 - 1' **ELASTIC SILT** : MH, very dark brown (7.5YR 3/2), 5% yellowish red (5YR 4/6) mottling, low plasticity, no dilatency, low toughness, dry, very soft, trace root fibers; fine granular soil texture..	MH			0.5					
			1.0	1 - 2' **SILT** : ML, black (7.5YR 2.5/1), low plasticity, slow dilatency, low toughness, moist, very soft, trace fibers and medium sand; @1.8-1.85 laminated black and grey medium sand; @1.95-2 brown lean clay.	ML			0.5					
			1.5										
			2.0	2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ

State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-282+50-N40

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	10/3/2005	10/3/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,725 N, 2,469,004 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0.5	0 - 1' **SILT** : ML, very dark grayish brown (10YR 3/2), low plasticity, slow dilatency, low toughness, moist, very soft, trace roots/fibers/medium sand.	ML								
			1.0	1 - 1.5' **FAT CLAY** : CH, yellowish brown (10YR 5/4), high plasticity, no dilatency, high toughness, dry to moist, firm to hard, trace roots/fibers.	CH			3					
			1.5	1.5' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-282+50-S10

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	10/3/2005	10/3/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,650 N, 2,469,001 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N ☐ E Feet ☐ S Feet ☐ W

Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
				0 - 0.5' **SILT** : ML, very dark grayish brown (10YR 3/2), low plasticity, slow dilatency, low toughness, moist, very soft, trace roots/fibers/medium sand.	ML								
			0.5	0.5 - 1.5' **FAT CLAY** : CH, yellowish brown (10YR 5/4), high plasticity, no dilatency, high toughness, dry to moist, firm, trace roots/fibers.	CH			2					
			1.0										
			1.5	1.5' End of Boring.									

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Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

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State of Wisconsin
Department of Natural Resources

SOIL BORING LOG INFORMATION

Form 4400-122 Rev. 7-98

Route To: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐

Facility/Project Name	License/Permit/Monitoring Number	Boring Number
HARP OU2/L & OU3		RL-282+50-S30

Boring Drilled By: Name of crew chief (first, last) and Firm	Date Drilling Started	Date Drilling Completed	Drilling Method
Randy Barnhill Natural Resource Technology, Inc.	11/14/2005	11/14/2005	hand auger

WI Unique Well No.	DNR Well ID No.	Common Well Name	Final Static Water Level	Surface Elevation	Borehole Diameter
			Feet (NAVD)	0.0 Feet (NAVD)	inches

Local Grid Origin ☐ (estimated: ☐) or Boring Location ☒
State Plane 734,630 N, 2,469,001 E S/C/N
1/4 of 1/4 of Section , T N, R
Lat ° ' "
Long ° ' "
Local Grid Location ☐ N Feet ☐ S ☐ E Feet ☐ W

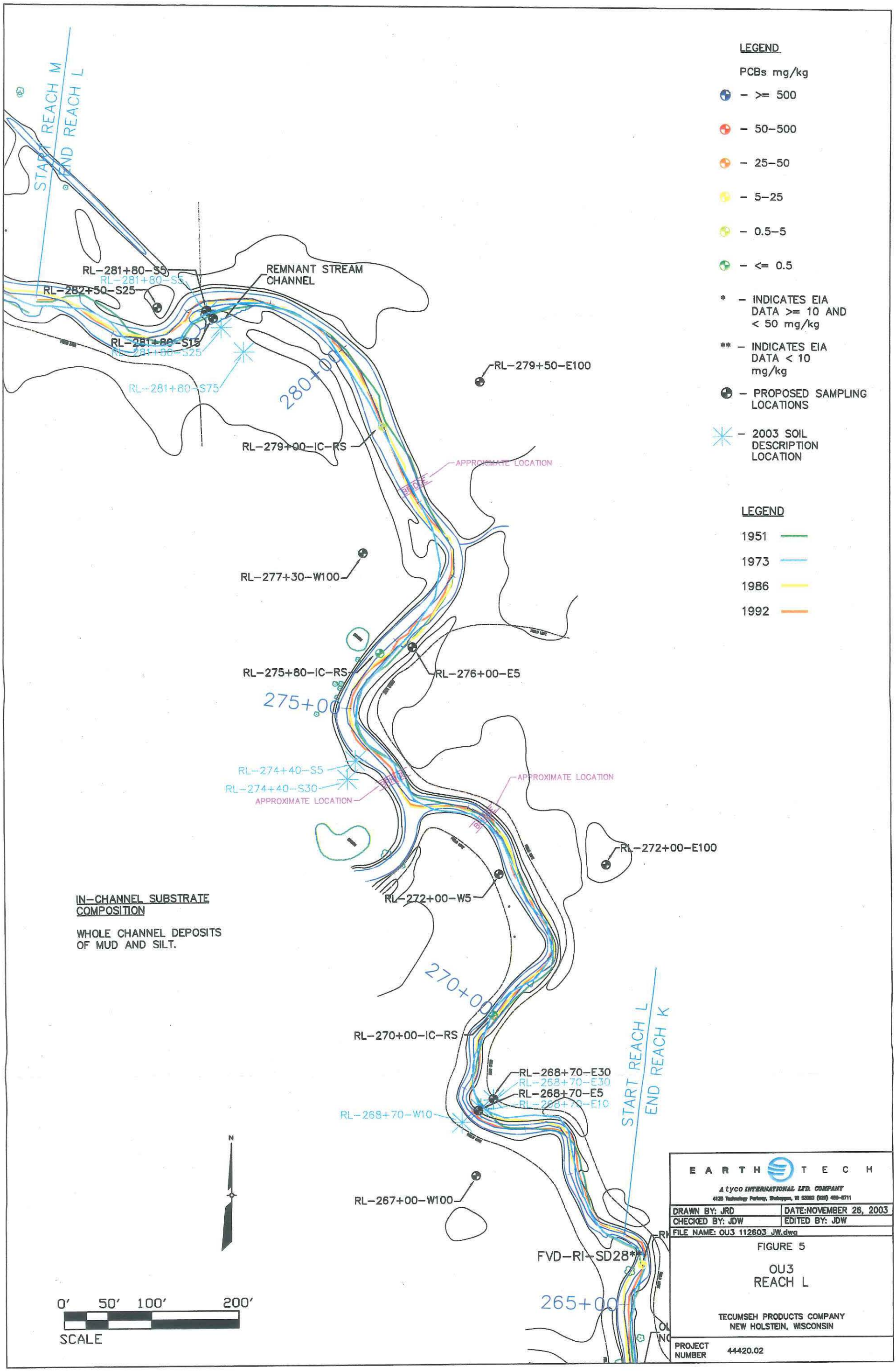
Facility ID	County	County Code	Civil Town/City/ or Village
	Calumet	8	Chilton

Sample Number and Type	Sample Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	Soil Properties: Compressive Strength	Moisture Content	Liquid Limit	Plasticity Index	P 200	RQD/ Comments
			0	0 - 0.5' **ELASTIC SILT :** MH, black (10YR 2/1), nonplastic, no dilatency, moist, very soft, trace roots/fibers.	MH								
			0.5	0.5 - 2' **FAT CLAY :** CH, brown (10YR 4/3), high plasticity, no dilatency, high toughness, moist, hard, trace roots to 1'.	CH								
			1.0										
			1.5										
			2.0	2' End of Boring.									

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature	Firm	
Eric P. Kovatch	Natural Resource Technology, Inc. 23713 W Paul Road, Suite D Pewaukee, WI. 53072	Tel: (262) 523-9000 Fax: (262) 523-9001

Date Modified: 1/6/2006 Template: WDNR SBL 1998 - Project: 1778_HARPOU2_3.GPJ


START REACH M
END REACH L
RL-281+80-S5
RL-281+80-S0
RL-282+50-S25
REMNANT STREAM CHANNEL
RL-281+80-S15
RL-281+80-S25
RL-281+80-S75
280+00
RL-279+50-E100
RL-279+00-IC-RS
APPROXIMATE LOCATION
RL-277+30-W100
RL-275+80-IC-RS
RL-276+00-E5
275+00
RL-274+40-S5
RL-274+40-S30
APPROXIMATE LOCATION
APPROXIMATE LOCATION
RL-272+00-E100
RL-272+00-W5
270+00
RL-270+00-IC-RS
RL-268+70-E30
RL-268+70-E30
RL-268+70-E5
RL-268+70-E10
RL-268+70-W10
START REACH L
END REACH K
RL-267+00-W100
FVD-RI-SD28**
265+00
LEGEND
PCBs mg/kg
– >= 500
– 50–500
– 25–50
– 5–25
– 0.5–5
– <= 0.5
* – INDICATES EIA DATA >= 10 AND < 50 mg/kg
** – INDICATES EIA DATA < 10 mg/kg
– PROPOSED SAMPLING LOCATIONS
– 2003 SOIL DESCRIPTION LOCATION
LEGEND
1951
1973
1986
1992
IN-CHANNEL SUBSTRATE COMPOSITION
WHOLE CHANNEL DEPOSITS OF MUD AND SILT.
N
0′ 50′ 100′ 200′
SCALE
EARTH TECH
A tyco INTERNATIONAL LTD. COMPANY
DRAWN BY: JRD
DATE:NOVEMBER 26, 2003
CHECKED BY: JDW
EDITED BY: JDW
FILE NAME: OU3 112603 JW.dwg
FIGURE 5
OU3
REACH L
TECUMSEH PRODUCTS COMPANY
NEW HOLSTEIN, WISCONSIN
PROJECT NUMBER
44420.02

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RL-268+70-E10

Geomorphic Setting: Intermediate terrace

Water Level in Sample Tube Hole: dry

Described By: David Richardson

Date Described: September 30, 2003

Soil Sample Collected:

Remarks: Lower surface than RL-268+70-W10. Adjacent to stream defined roughly by the field line

Depth (inches)	Soil Horizon	Description
0-10	A	10YR 2/1 black, silt loam, ML, dry, friable, 5% roots, no mottles, fine granular structure
10-17	A2	10YR 2/1 black, silty clay loam, ML, damp, friable, 2% roots, no mottles, fine granular structure, increase in clay due to argillic condition, clay skins on ped faces
17-41	A3	10YR 2/1 black, sandy loam, SM, moist, friable, 1% roots, 10% 5YR 3/3 dark reddish brown mottles, fine granular structure, no clay skins, shell fragments in bottom 10 inches
41-	C	10YR 5/2 grayish brown, clay loam, CL, damp, firm, no roots, 2% 5GY 5/1 greenish gray mottles, coarse subangular blocky structure
		End of core at 50 inches in C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RL-268+70-E30

Geomorphic Setting: High terrace

Water Level in Sample Tube Hole: 31 inches below ground surface

Described By: David Richardson

Date Described: September 30, 2003

Soil Sample Collected:

Remarks: Edge of hay field. Clear scarp between E10 and E30. Surfical A horizon gone due to clay skins present at surface in A horizon or due to plow zone. Surface away from stream across east side of stream.

Depth (inches)	Soil Horizon	Description
0-14	Ap	10YR2/1 black, silty clay loam, ML, damp, friable, 2% roots, 10% 5YR 3/4 dark reddish brown mottles, fine subangular blocky structure, clay skins on ped faces
14-38	A2	10YR 2/1 black, silt loam, ML, dry, friable, 2% roots, 20% 5YR 3/3 dark reddish brown mottles, fine granular structures, no clay skins
38-46	B	10YR 3/2 very dark grayish brown, silty clay loam, ML, moist, friable, trace roots, 15% 5YR 3/4 dark reddish brown mottles, medium subangular blocky structure, no clay skins
46-	C	10YR 3/2 very dark grayish brown, sandy loam, SM, wet, friable, no roots, 5% 10YR 4/4 dark yellowish brown mottles, medium granular structure
		End of core at 51 inches in C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RL-268+70-W10

Geomorphic Setting: Intermediate terrace

Water Level in Sample Tube Hole: 27 inches below ground surface

Described By: David Richardson

Date Described: September 30, 2003

Soil Sample Collected:

Remarks: Same surface on west side of Pine Creek from oxbow location to tributary stream (south to north). Approximately same elevation as E30.

Depth (inches)	Soil Horizon	Description
0-11	A	10YR 2/1 black, silt loam, ML, dry, friable, 5% roots, no mottles, fine granular structure
11-19	A2	10YR 2/1 black, silty clay loam, ML, dry, friable, 2% roots, no mottles, fine granular structure, increase in clay content due to argillic condition similar to Bt horizon. Indicative of a stable soil, clay skins on ped faces
19-33	C	2.5YR 4/2 dark grayish brown, silty clay loam, ML (more clay than A2), damp, friable, trace roots, 15% 10YR 4/4 dark yellowish brown mottles, coarse subangular blocky structure, no definitive clay skins (not argillic), below 24 inches some very fine sand layers within the silty clay loam
33-	2C	10YR 5/2 grayish brown, sandy clay loam, SM, moist, friable/firm, trace roots, 25% 10YR 4/4 dark yellowish brown and 10YR 5/1 gray mottles, coarse subangular blocky structure
		End of core at 38 inches in 2C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RL-274+40-S5

Geomorphic Setting: Low terrace

Water Level in Sample Tube Hole: 22 inches below ground surface

Described By: David Richardson

Date Described: October 2, 2003

Soil Sample Collected:

Remarks: Low terrace area 100 feet long by 30 feet wide. Atypical in this reach of the stream. Very little terrace development due to low channel gradient.

Depth (inches)	Soil Horizon	Description
0-5	A	10YR 2/1 black silt loam, ML, moist, friable, 10% roots, no mottles, fine granular structure
5-19	A2	10YR 2/1 black, silt loam, ML, moist, friable, 5% roots, 10% 5YR 3/3 dark reddish brown mottles, fine granular structure
19-22	C	10YR 5/1 gray, silty clay loam, CL, moist, friable, trace roots, no mottles, coarse subangular blocky structure, clay skins on ped faces
22-	2C	7.5YR 4/2 brown, clay loam, CL, damp, firm, no roots, 25% 10B 6/1 bluish gray mottles, medium angular blocky structure
		End of core at 31 inches in 2C horizon

Site Name: Pine Creek Waterway Soil Characterization Study, New Holstein, Wisconsin		
Sample Location: RK-274+40-S30		
Geomorphic Setting: Intermediate terrace		
Water Level in Sample Tube Hole: dry		
Described By: David Richardson		
Date Described: October 2, 2003		
Soil Sample Collected:		
Remarks: Surface on west side of stream in Reach L adjacent to the stream in most locations. Similar surface as east side of stream adjacent to the channel.		
Depth (inches)	**Soil Horizon**	**Description**
0-5	A	10YR 2/1 black, silt loam, ML, dry, friable, 10% roots, no mottles, fine granular structure
5-19	A2	10YR 2/1 black, silty clay loam, CL, damp, friable, 5% roots, 5%YR 3/4 dark reddish brown mottles, fine granular structure
19-28	A3	10YR 2/1 black, silty clay loam, CL, damp, friable, 2% roots, no mottles, medium subangular blocky structures, clay skins on ped faces
28-	C	10YR 5/4 yellowish brown, silty clay loam, CL, damp, friable, 1% roots, 40% 10YR 5/1 gray mottles, medium subangular blocky structures
		End of core at 31 inches in C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RL-281+80-S5

Geomorphic Setting: Low terrace

Water Level in Sample Tube Hole: 9 inches below ground surface

Described By: David Richardson

Date Described: October 2, 2003

Soil Sample Collected:

Remarks: Floodplain/low terrace area roughly 50 long by 20 feet wide. Isolated areas adjacent to the stream.

Depth (inches)	Soil Horizon	Description
0-8	A	10YR 2/1 black, silt loam, ML, wet, friable, 5% roots, no mottles, fine granular structure
8-20	A2	10 YR2/1 black, silt loam, ML, wet, friable, 5% roots, no mottles, fine granular structure, layers of black non-native color, sweet odor
20-33	2A	10YR 2/1 black, silt loam, ML, moist, friable, 10% roots, no mottles, medium subangular blocky structure, buried A horizon, trace coarse sand and pebbles, shell fragments
33-	C	7.5YR 4/2 brown, clay loam, CL, damp, firm, trace roots, 10% N 5/0 gray mottles, medium subangular blocky structure
		End of core at 37 inches in C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RL-281+80-S25

Geomorphic Setting: Intermediate terrace

Water Level in Sample Tube Hole: 26 inches below ground surface

Described By: David Richardson

Date Described: October 2, 2003

Soil Sample Collected:

Remarks: Steep scarp between low and intermediate terraces

Depth (inches)	Soil Horizon	Description
0-5	A	10YR 2/1 black, silt loam, ML, dry, friable, 10% roots, no mottles, fine granular structure
5-22	A2	10YR 2/1 black, silty clay loam, CL, damp, friable, 5% roots, 10% 5YR 3/4 dark reddish brown mottles, fine granular structure, clay skins of ped faces
22-30	A3	10YR 2/1 black, silt loam, ML, wet, friable, 5% roots, no mottles, fine granular structure, few coarse sand
30-	C	5YR 4/2 dark reddish gray, clay loam, CL, damp, firm, trace roots, 15% 5GY 6/1 greenish gray and 10YR 4/4 dark yellowish brown mottles, medium angular blocky structure
		End of core at 37 inches in C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RL-281+80-S75

Geomorphic Setting: high terrace

Water Level in Sample Tube Hole: dry

Described By: David Richardson

Date Described: October 2, 2003

Soil Sample Collected:

Remarks: Upland surface which is the dominant surface away from the channel on the south and west side of the channel.

Depth (inches)	Soil Horizon	Description
0-5	A	10YR 2/1 black, silt loam, ML, damp, friable, 10% roots, no mottles, fine granular structure
5-14	A2	10YR 2/1 black, silty clay loam, CL, damp, friable, 5% roots, 10% 5YR 3/4 dark reddish brown mottles, fine granular structure, clay skins of ped faces
14-	C	7.5YR 5/3 brown, clay loam, CL, damp, firm, trace roots, 40% 5YR 3/4 dark reddish brown mottles, medium angular blocky structure
		End of core at 22 inches in C horizon

P101/2PL	0-6" (RP001L – 6 ppm)
P102/4PL	0-12" (RP002L – 13.3 ppm)
P103/6PL	0-6" (RP004L – 7.28 ppm)
P105/10PL	6-12" (RP006L – 6.05 ppm, duplicate sample analysis is 2.26 ppm)
P202/3PR	0-6" (RP502R – 5.55 ppm, RP506R – 7.46 ppm)

Polygons Not Sampled – OU-3 Reaches N, O and P

Polygon	Similar Polygon Identified in Original Sampling Plan and Results from Sampling Similar Polygon
6NL ok	4NL 8.4/39/0.22
9NL ok	1NL 15/0.89/0.4
13NL ok	1OR 6.4/2.6
9NR I have 8NR, not 9NR – 1 sample inside 9NR, rest are at boundary between 8/9NR	7NR 13/0.11
11NR	
3OL	3OR 0.15/? away from stream
4OL	5OR 31/1.9
5OL	5OR 31/1.9
6OL	7OR <0.033/? away from stream
8OL	11OL 4/0.23 perpendicular to stream -- need to identify sample location
12OR	13OR 0.92/? away from stream
1PL	1PR 10/4.4/?
3PL	8PL 0.21/? away from stream
5PL	7PL 20/01
10PL	12PL 8.8/2
11PL	12PR 10/6
12PL	11PR 13/0.043
15PL	11PR 13/0.043
16PL	14PL <0.036 away from stream
6PR	14PL <0.036 away from stream
7PR	14PL <0.036 away from stream
8PR	3PR 12/0.083

Comment [jmg1]: Refer to your other document for O and P polygon comments/additions

Locations where the stream has moved laterally and deposition of PCBs on the inside of the meander is likely and where not previously sampled.

Approximate Location	Comment
310+80-E10	Within polygon 5NR I picked out the same ones for N so
313+00-E10	Within polygon 8NR we are in agreement – three for three
314+90-W10	Within polygon 10NL
322+00-E10	Within 5OR OK with these five
323+00-W10	Within 5OL
324+70-W10	Within 7OL
325+00-E10	Within 5OL
325+70-W10	Within 7OL
333+40-E10	Within 3PR
11PR/12PR	The tight meander area but this could be captured by your comment (11 PR -- Downstream portion near 339+70) in the under-sampled list

Locations that appear to be under-sampled. {Note: This list is prepared without the knowledge of where TRC may have collected step-out samples.

Western portion of 5NR	See lateral deposition sample above (H)
7NL upstream	At about 310+30-W20 (M)
7NL downstream	At about 312+50-W10 (M)
8NR downstream	See lateral deposition sample at 313+00-E10; upstream of 9NR (H) Also at meander between 204 and 204a
10NL upstream	At about 313+50-W30 (M) Also at 314+50
12NL	Downstream of 13NL; sample taken
11NR	Upstream and downstream samples
N110	Upland boundary
5NL	Downstream, upland sample at boundary between 0-6 and 6-12 boundary
7OL	See lateral deposition samples above
3OR	Downstream at about 320+00-e10
5OR	At about 322+80-E20
11OR	Upstream portion at about 327+30
7OLa	The depression in this polygon
1PR	Upstream and downstream of 2PR; TRC will likely claim recent samples cover;
3PR	Upstream portions; upstream end of P202 not identified
9PR	Between 8PR and 12PR
9PR	Near 341+00-N10
2PL	Upstream portion near 331+00-S10; sample taken 2.13
2PL	In internally drained area along road embankment (M)
11PR	Downstream portion near 339+70
10PL	Portion downstream of 11PL; included in removal area P104

Comment [jmg2]: For this category of Reach P, our comments were almost a one for one match. I have no additions to this section.

Selected locations where only the 0 to 6 inch depth was analyzed. Alternatively, simply state that all samples where only the 0 to 6 inch depth was analyzed need to be sampled.

RN-305+90-N90	
RN-305+90-S40	
RN-309+40-N10	
RN-311+00-W100	
RN-311+60-W40	
RN-313-00-E100	
RN-315+50-E10	
RN-315+50-W40	

Polygons Not Sampled – OU-3 Reaches N, O and P
JMG Comments in Orange

Polygon	Similar Polygon Identified in Original Sampling Plan and Results from Sampling Similar Polygon
6NL	4NL 8.4/39/0.22
9NL	1NL 16/0.91, but 9NL is farther away from the stream
13NL	1OR 6.4/2.6; not fully sampled, but included in removal area
9NR	7NR 13/0.11; subsequently sampled and found 13.2/0.17
11NR	Far from stream and data from polygons around it is low (below 1)
3OL	3OR 0.15/? away from stream
4OL	5OR 31/1.9; not sampled, but identified for removal to depth of 12 inches (floor PRV?)
5OL	5OR 31/1.9
6OL	7OR <0.033/? away from stream
8OL	11OL 4/0.23 perpendicular to stream -- need to identify sample location; eastern half appears to be lower elevation
12OR	13OR 0.92/? away from stream
7OR	Is away from stream
11OR	Bracketed by low concentrations
10OR	Could be low
RO 330+20-S50	
1PL	1PR 10/4.4/?
3PL	8PL 0.21/? away from stream
5PL	7PL 20/01; sampled 3.08/9.86
10PL	12PL 8.8/2 -- appears to have been sampled 23/28/0.45
11PL	12PR 10/6; sampled at one end at depth of 6 to 12 inches; identified for removal to 12 inches
12PL	11PR 13/0.043
15PL	11PR 13/0.043
16PL	14PL <0.036 away from stream
6PR	14PL <0.036 away from stream; TRC will claim that a sampled originally identified for 10PR falls within 6PR. If so, then 10PR is not sampled
7PR	14PL <0.036 away from stream
8PR	3PR 12/0.083; sampled 11.3; southern part identified for removal
4PR	There are samples taken at the boundary between 4PR and 1PR and 6PR. Since these are boundary samples, I identified this as having no sampling.

Comment [jmg1]: I have it identified as no samples in 10PR based on its location in 6PR.

RO-319+60-N30	
RO-323+40-N50	
RO-327+00-N30	
RO-328+00-S100	
RO-328+70-N10	
RO-319+60-S150	
RO-324+00-S60	
RO-330+20-S50	From here through RO-318+20-N80 the
RO-330+30-N5	concentrations are low (less than 1)
RO-328+70-N50	
RO-328+70-N30	
RO-319+60-N50	
RO-319+60-N70	
RO-318+20-N80	
RP-332+70-S40	
RP-332+70-N35	
RP-336+70-S60	

Comment [jmg3]: There are others but the concentrations are under 1 ppm.

Polygons/Sections where characterization does not support excavation depth

18ML	9.09 at 12-18" and 22.2 (RN025L) at 12-18"
5NL and 5NL/N103	5.79 (RN012L) at 0-6" and 8.16 (RN013L) at 6-12"
20R/N206	7.69 (RN512R) at 0-6"
12NL	12.4 (RN015L) at 6-12"
10NL/N107	6.7 (RN014L) at 0-6"
21ML	5.76(RN024L) at 6-12"
10R/O202	0-12" (RO507, RO505, RO500R)
4OR/O201	(RO501R, RO503R)

LEGEND

PCBs mg/kg

- – >= 500
- – 50–500
- – 25–50
- – 5–25
- – 0.5–5
- – <= 0.5

* – INDICATES EIA DATA >= 10 AND < 50 mg/kg

** – INDICATES EIA DATA < 10 mg/kg

– PROPOSED SAMPLING LOCATIONS

– 2003 SOIL DESCRIPTION LOCATION

LEGEND

1951

1973

1986

1992

END OU3
END REACH P

RP–340+40–N10
RP–340+40–N5

RP–338+00–N100

340+00

RP–337+90–IC–RS

RP–339+00–S100

RP–334+30–S10

RP–334+30–S5

RP–334+30–S20

RP–334+30–S10

335+00

RP–335+00–S100

START REACH P
END REACH O

RP–331+90–IC–RS

IN–CHANNEL SUBSTRATE COMPOSITION

WHOLE CHANNEL DEPOSITS OF MUD AND SILT.

N

0′ 50′ 100′ 200′

SCALE

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

4135 Technology Parkway, Sheboygan, WI 53083 (920) 458–8711

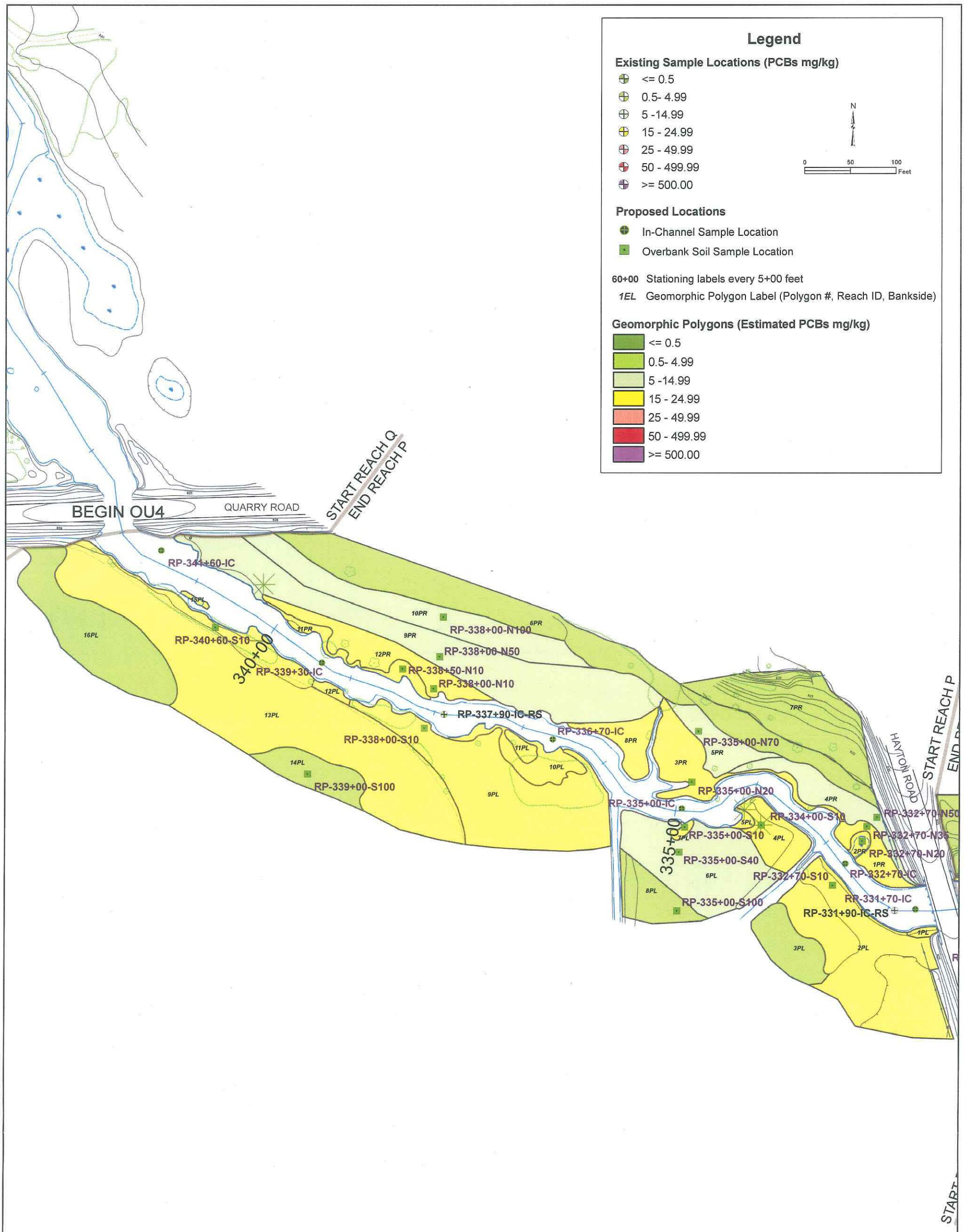
DRAWN BY: JRD	DATE:NOVEMBER 26, 2003
CHECKED BY: JDW	EDITED BY: JDW
FILE NAME: OU3 112603 JW.dwg	

FIGURE 9

OU3
REACH P

TECUMSEH PRODUCTS COMPANY
NEW HOLSTEIN, WISCONSIN

PROJECT NUMBER 44420.02



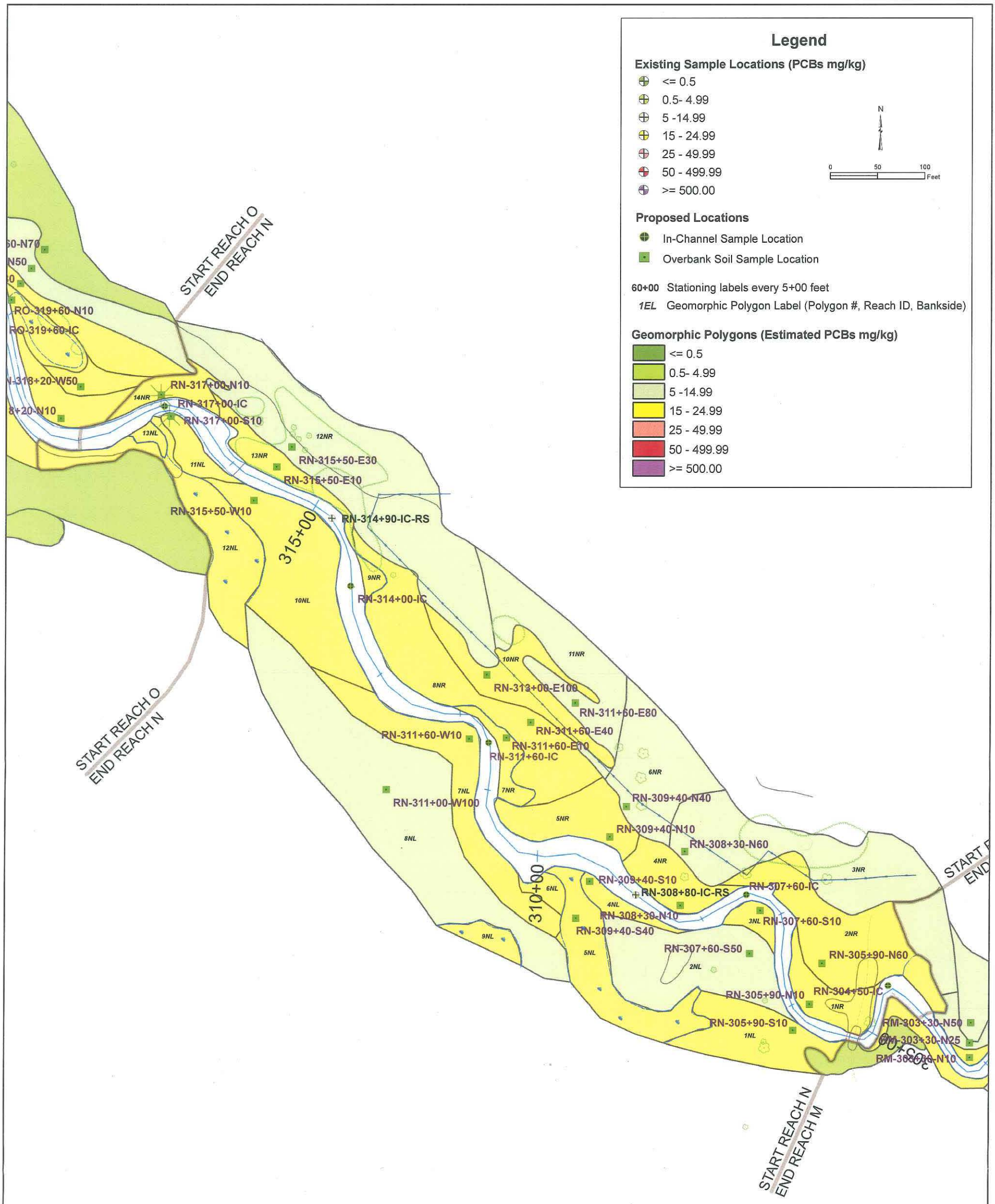
EARTH TECH
4135 Technology Parkway, Sheboygan, WI 53083 (920) 458-8711

DRAWN BY: SMF	DATE: May 4, 2005
CHECKED BY: JT/SRK	EDITED BY: SMF
FILE NAME: Reach P	

FIGURE 16
PRE-INVESTIGATION SWAC
OU3
REACH P

TECUMSEH PRODUCTS COMPANY
NEW HOLSTEIN, WISCONSIN

PROJECT NUMBER 44420



Legend

Existing Sample Locations (PCBs mg/kg)

- <= 0.5
- 0.5- 4.99
- 5 -14.99
- 15 - 24.99
- 25 - 49.99
- 50 - 499.99
- >= 500.00

N

0 50 100 Feet

Proposed Locations

- In-Channel Sample Location
- Overbank Soil Sample Location

60+00 Stationing labels every 5+00 feet

1EL Geomorphic Polygon Label (Polygon #, Reach ID, Bankside)

Geomorphic Polygons (Estimated PCBs mg/kg)

- <= 0.5
- 0.5- 4.99
- 5 -14.99
- 15 - 24.99
- 25 - 49.99
- 50 - 499.99
- >= 500.00

EARTH TECH

4135 Technology Parkway, Sheboygan, WI 53083 (920) 458-8711

DRAWN BY: SMF	**DATE:** May 4, 2005
CHECKED BY: JT/SRK	**EDITED BY:** SMF
FILE NAME: Reach N	

FIGURE 14
PRE-INVESTIGATION SWAC
OU3
REACH N

TECUMSEH PRODUCTS COMPANY
NEW HOLSTEIN, WISCONSIN

PROJECT NUMBER 44420

LEGEND

PCBs mg/kg

- – >= 500
- – 50–500
- – 25–50
- – 5–25
- – 0.5–5
- – <= 0.5

* – INDICATES EIA DATA >= 10 AND < 50 mg/kg

** – INDICATES EIA DATA < 10 mg/kg

– PROPOSED SAMPLING LOCATIONS

– 2003 SOIL DESCRIPTION LOCATION

LEGEND

1951

1973

1986

1992

START REACH O
END REACH N

START REACH N
END REACH M

RN–317+00–N5
RN–317+00–N5

RN–317+00–S5
RN–317+00–S5

RN–314+90–IC–RS

315+00

RN–313+00–E100

RN–311+00–W100

RN–308+80–IC–RS

310+00

RN–308+20–N10

RN–307+30–S10

RN–305+90–N10

RN–304+50–S5

RN–304+50–S30

305+00

IN–CHANNEL SUBSTRATE COMPOSITION

WHOLE CHANNEL DEPOSITS OF MUD AND SILT.

N

0′ 50′ 100′ 200′

SCALE

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

4135 Technology Parkway, Sheboygan, WI 53083 (920) 458–8711

DRAWN BY: JRD	DATE:NOVEMBER 26, 2003
CHECKED BY: JDW	EDITED BY: JDW
FILE NAME: OU3 112603 JW.dwg	

FIGURE 7

OU3
REACH N

TECUMSEH PRODUCTS COMPANY
NEW HOLSTEIN, WISCONSIN

PROJECT NUMBER 44420.02

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RN-317+00-N5

Geomorphic Setting: Low terrace

Water Level in Sample Tube Hole: 12 inches below ground surface

Described By: David Richardson

Date Described: October 7, 2003

Soil Sample Collected:

Remarks: Representative location of north side of stream

Depth (inches)	Soil Horizon	Description
0-10	A	10YR 2/1 black, silt loam, ML, moist, friable, 5% roots, no mottles, fine granular structure
10-13	A2	10YR 2/1 black, silty clay loam, CL, moist, friable, 5% roots, 10% 7.5YR 3/4 dark brown mottles, fine granular structure, thin clay skins on ped faces
13-29	2Ab	10YR 2/1 black, silt loam, ML, wet, friable, 25% roots, no mottles, fine granular blocky structure, wood fragments, former O horizon that was exposed to air and decomposed to a mineral A horizon
29-	2C	7.5YR 5/2 brown, clay loam, CL, damp, firm, no roots, 15% 10GY 6/1 greenish gray mottles, medium angular blocky structure
		End of core at 33 inches in 2C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RN-317+00-S5

Geomorphic Setting: Intermediate terrace

Water Level in Sample Tube Hole: 31 inches below ground surface

Described By: David Richardson

Date Described: October 7, 2003

Soil Sample Collected:

Remarks: Representative location for south side of channel in Reach N.

Depth (inches)	Soil Horizon	Description
0-8	A	10YR 2/1 black, silt loam, ML, moist, friable, 5% roots, no mottles, fine granular structure
8-17	A2	10YR 2/1 black, silt clay loam, CL, moist, friable, 5% roots, 10% 5YR 3/3 dark reddish brown mottles, fine granular structures, clay skins on ped faces
17-24	A3	10YR 2/1 black, silty clay loam, CL, damp, friable, 10% roots, no mottles, fine subangular blocky structure, clay skins on ped faces
24-34	2Ab	10YR 2/1 black, silt loam, ML, moist, friable, 25% roots, no mottles, medium subangular blocky structure, no clay skins, former O horizon
34-	2C	7.5YR 5/2 brown, clay loam, CL, damp, firm, no roots, 15% 10GY 6/1 greenish gray mottles, medium angular blocky structure
		End of core at 39 inches in 2C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RO-323+50-N10

Geomorphic Setting: Low terrace

Water Level in Sample Tube Hole: 13 inches below ground surface

Described By: David Richardson

Date Described: October 7, 2003

Soil Sample Collected:

Remarks: Selected one representative location instead of two since same surface on the inside of the meander bend.

Depth (inches)	Soil Horizon	Description
0-4	A	10YR 2/1 black, silt loam, ML, moist, friable, 10% roots, no mottles, fine granular structure
4-21	A2	10YR 2/1 black, silty clay loam, CL, moist, friable, 10% roots, 10% 5YR 3/4 dark reddish brown mottles, fine granular structures, clay skins on ped faces
21-37	2Ab	10YR 2/1 black, silt loam, ML, wet, friable, 25% roots, no mottles, medium subangular blocky structure, former O horizon
37-	2C	5Y 4/1 dark gray, silty clay loam, CL, wet, firm, trace roots, no mottles, medium subangular blocky structure
		End of core at 44 inched in 2C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RP-334+30-S5

Geomorphic Setting: Low terrace

Water Level in Sample Tube Hole: 12 inches below ground surface

Described By: David Richardson

Date Described: October 7, 2003

Soil Sample Collected:

Remarks: Low terrace in Reach P.

Depth (inches)	Soil Horizon	Description
0-12	A	10YR 2/1 black, silt loam, ML, wet, friable, 10% roots, no mottles, fine granular structure
12-19	A2	10YR 2/1 black, silty clay loam, CL, wet, friable, 10% roots, no mottles, medium subangular blocky structure, clay skins on ped faces
19-36	2Ab	10YR 2/1 black, silt loam, ML, wet, friable, 25% roots, no mottles, medium subangular blocky structure, former O horizon
36-54	2Ab2	10YR 2/1 black, silt loam, ML, wet, friable, 25% roots, no mottles, medium subangular blocky structure, 10% shell fragments and trace coarse sand and pebbles, former O horizon
54-	2C	10YR 5/1 gray, silty clay loam, CL, wet, firm, no roots, no mottles, medium subangular blocky structure
		End of core at 60 inches in 2C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RP-334+30-S20

Geomorphic Setting: Intermediate terrace

Water Level in Sample Tube Hole: 10 inches below ground surface

Described By: David Richardson

Date Described: October 7, 2003

Soil Sample Collected:

Remarks: Representative of intermediate terrace on south and west side of channel.

Depth (inches)	Soil Horizon	Description
0-4	A	10YR 2/1 black, silt loam, ML, moist, friable, 10% roots, no mottles, fine granular structure
4-20	A2	10YR 2/1 black, silt loam, ML (more clay than above), wet, friable, 10% roots, 10% 5YR 3/4 dark reddish brown mottles, fine granular structures, thin clay skins on ped faces
20-33	A3	10YR 2/1 black, silt loam, ML, moist, friable, 2% roots, 5% 5YR 3/4 dark reddish brown mottles, fine granular structure, no clay skins on ped faces
33-52	2Ab	10YR 2/1 black, silt loam, ML, wet, friable, 25% roots, no mottles, medium subangular blocky structure, 15% shell fragments, trace coarse sand
52-	2C	10YR 5/1 gray, silty clay loam, CL, wet, firm, no roots, no mottles, medium subangular blocky structure
		End of core at 60 inches in 2C horizon

Site Name: Pine Creek Waterway
Soil Characterization Study, New Holstein, Wisconsin

Sample Location: RP-340+40-N10

Geomorphic Setting: Intermediate terrace

Water Level in Sample Tube Hole: 12 inches below ground surface

Described By: David Richardson

Date Described: October 7, 2003

Soil Sample Collected:

Remarks: Representative intermediate terrace in Reach P

Depth (inches)	Soil Horizon	Description
0-8	A	10YR 2/1 black, silty clay loam, CL, moist, friable, 10% roots, no mottles, fine granular structure
8-19	A2	10YR 2/1 black, silty clay loam, CL, moist, friable, 10% roots, 10% 5YR 3/4 dark reddish brown mottles, fine granular structures, clay skins on ped faces
19-29	C	10YR 3/1 dark gray, silty clay loam, CL, wet, firm, 2% roots, 5% 5YR 3/4 dark reddish brown mottles, medium subangular blocky structure, no clay skins
29-35	2Ab	10YR 2/1 black, silt loam, ML, moist, friable, 25% roots, no mottles, fine granular structure, former O horizon
35-	2C	7.5YR 5/2 brown, clay loam, CL, moist, firm, no roots, 10% 5G 6/1 greenish gray mottles, medium angular blocky structure
		End of core at 42 inches in 2C horizon

Draft M E M O

Date: December 4, 2003

To: Philip Simon, ATS
Peter Simon, ATS

From: Dave Richardson, Earth Tech
Steve Rowe-Krumdick, Earth Tech
John Wiater, Earth Tech

Subject: **HARP - OU3; Overbank Sampling and Analysis Plan (SAP)**
Pine Creek, Reaches H through P: Geomorphological Characterization and Soil Descriptions, and OU3 Off-Channel Sampling Plan
New Holstein, Wisconsin

INTRODUCTION

This memorandum characterizes the stream environment of the Third Operable Unit (OU3) of the Hayton Area Remediation Project (HARP). The OU3 Soil Sampling Plan is based on geomorphological characterization and soil descriptions performed in spring and fall of 2003, a review of aerial photography, and mapped topographic contours.

The purpose of the geomorphological characterization is to determine the depositional environments within OU3 and understand the storage and transport of PCB contaminated sediment through the system. The depositional environments in OU3 have been mapped and a focused sampling strategy has been developed to determine the concentration and extent of PCB contaminated sediment. Geomorphological principles demonstrated in HARP OU1/Segment 7 and OU2 have been applied to OU3. On a geologic timescale, the release and transport of PCB within the HARP System (Jordan and Pine Creeks) is a relatively recent phenomenon so the focus of this sampling plan is surface and near surface depositional areas.

For the purposes of investigation, OU3 has been divided into 9 reaches (H through P) based on channel gradient and the similarity of depositional environments within a reach. The reaches are presented on Figure 1A. It is important to note that Reach H, which was originally classified as part of OU2 in the HARP RI/FS, is being included in this OU3 effort. As discussed in the OU2 sampling plan, characterization of Reach H was deferred because of limitations in the aerial photographic coverage available at the time the plan was developed. However, reclassification of Reach H into OU3 also makes sense from a geomorphological perspective because of changes in stream gradient.

AERIAL PHOTOGRAPH INTERPRETATION

Ann Arbor Technical Services (ATS) purchased historical aerial photographs of Pine Creek within OU3. The dates of the photographs range from 1938 to 2001. In meandering portions of the stream, the stream energy (erosive forces) alternates from bank to bank, which will increase the rate of meandering. Increased erosion on the outside of a meander bend would be offset by increased deposition on the inside of the downstream meander bend. For OU3, aerial photographs for the years 1951, 1973, 1986, and 1992 were sufficient to document the relatively minor meanders that were observed.

Experience with HARP OU1 Segment 7 and OU2 has shown the highest concentration PCB laden sediments are located in sediment deposited on the inside of the meander bends. This mechanistic model suggests that the high concentration PCB sediments remained at the ground surface or were buried in-place by overbank deposition as the channel migrated in the direction of the outside meander bend. In either scenario, the channel migration or burial by overbank deposition would limit re-suspension and further transport of the PCBs.

The aerial photographs were assigned survey coordinates and projected in ArcInfo using the Wisconsin State Plane coordinate system. The aerial photographs were then imported into AutoCAD, scaled, and adjusted according to known landmarks (road crossings, road intersections, bridges etc). The stream channel was then visually located and digitally traced according to its location during that particular year. In several of the aerial photographs, poor photo quality and/or the season in which the photo was taken (due to overgrown vegetation) prevented the tracing of the entire stream channel as it meandered through the landscape. Some photographs were not used due to poor quality of the aerials or the presence of a better quality photograph within a similar period.

The aerial photograph review compared the former channel bed locations over several years and the 1997 topographic survey of the channel. The comparison of the channel locations indicated the amount of channel migration between the times of the photographs. To determine locations of the historical overbank deposits potentially containing significant PCB concentrations, it was assumed that the PCB laden sediments arrived downstream of the confluence of Pine and Jordan Creeks sometime after 1966 [see ATS Technical Memorandum (July 23, 2001), and OU1/Segment 7 Remediation SOW]. It is assumed that the channel bottom and inside meander bends at the time of the PCB release, and for a time period after, will contain the highest concentration of PCBs. Due to the uncertainty associated with the interpretation of aerial photographs, emphasis was placed on the aerial photographs taken between 1952 and the 1970s to estimate the location of the late 1960s-early 1970s channel. The location of the channel from the late 1960s to the present location is of primary concern for this project.

GEOMORPHOLOGICAL CHARACTERIZATION

The purpose of the Geomorphological Characterization was to determine the location, similarities, and differences between depositional areas adjacent to Pine Creek in OU3. It was anticipated that recent depositional areas, identified during the geomorphological investigation, would be sampled to determine the presence and extent of PCB contamination. In-channel sediment deposition within OU3 was previously characterized in April 1998 (Pine Creek Waterway Soil/Sediment Study Final Technical Memorandum - Rust, June 1998). The 1998 study indicated that the majority of the in-channel deposits in OU3 were half channel and full channel sediment deposits rather than the gravel and cobble substrate materials observed in OU2. The half channel deposits are located along the inside of meander bends. The full channel deposits occur where the channel widens in low gradient areas. Although the information obtained during the 1998 investigation may be updated by another sediment inventory, the information previously obtained is sufficient for conceptual planning purposes. General channel bed information for the reach is presented in a text note on each of the figures.

The geomorphological characterization for bank and over-bank deposits is a two-step process that involves the interpretation of historical aerial photographs of Pine Creek and the description of soil profiles to identify areas of historical lateral migration and overbank deposition.

GEOMORPHOLOGICAL ANALYSIS

Earth Tech utilized the results of the aerial photographic review, the 1997 detailed topographic mapping, the longitudinal profile of Pine Creek, and notes collected during several site visits from 1998 to the

present, to estimate the number and location of various depositional environments and compare and contrast the different deposits. An Earth Tech geomorphologist selected representative locations for detailed soil descriptions to provide information on each type of depositional environment. Figures illustrating the location of the soil descriptions for each reach are provided in Attachment A.

In a stream environment, it is important to be able to relate one area to another when evaluating depositional environments. The soil profile is the most accurate way to determine if two surfaces have undergone similar depositional and erosion factors. Soil description locations were selected based on their setting in the stream environment. The channel gradient, location relative to a meander bend, elevation, likelihood of sediment deposition, and number of similar surfaces were parameters used to select the soil description locations. To clarify the setting for a soil description location, the terms *floodplain* and *low, intermediate, and high terrace* are used in a relative sense and are not based on flood elevation determinations. The soil profile descriptions were used to confirm or change the prefield determination of floodplain, low, intermediate, or high terrace terminology. Although the terms are not based on flood stages, the use of the term low terrace relates similar surfaces, within a designated reach, based on topography and soil development.

A hand-operated 2-inch diameter sampling tube was used to examine the soil profile. The soil horizons, soil characteristics, and potential sediment deposition layers were described. Soil characteristics such as horizon designation, Munsell soil color, texture, moisture, plasticity, organic content, mottling, structure, and any other notable features were recorded on field forms. This information will be used to ascertain the similarities and differences between the soil profiles and identify representative locations for soil sampling.

RESULTS

The following sections describe the soil profile descriptions, geomorphic surfaces, and sampling plan for each reach of the stream in OU3. The figures showing each reach, the historic air photo channels, and sampling locations are included in Attachment A. The soil profile descriptions are included in Attachment B. The sampling table is included in Attachment C.

Reach H (Station 208+00 to 217+80)

No soil descriptions were completed within Reach H during 2003. During a previous investigation, a four soil sample location transect was completed at 215+00. Analysis of the historical aerial photographs show the channel has been stable from 1951 to the 1997. The only deviation from the current channel was at 215+00 where the 1951 channel was present south of the current channel location. The former channel was evaluated by the four core soil transect.

The transect at 215+00 included a soil description and soil sample on the floodplain, low terrace, intermediate terrace south of the current channel and high terrace located north of the current channel. This transect was selected because it was the area with the greatest likelihood for PCB deposition in Reach H.

Soil samples will be collected for laboratory analysis from a transect at 209+80. The transect will include a soil sample from the low terrace and intermediate terrace west of the current channel and the high terrace on the east side of the current channel. Two additional samples will be collected from the high terraces north and south of the current channel at 215+00. These samples will determine the horizontal extent of the PCB contamination at this transect.

Reach I (Station 217+80 to 232+00)

Four soil descriptions were completed within Reach I. Two soil descriptions were located in the low terrace, one on an intermediate terrace, and one on a high terrace. Analysis of the historical aerial photographs showed the channel has been stable since 1951.

The low terrace soil description at 221+60-S25 includes three A horizons from ground surface to a depth of approximately 19 inches. The A horizons overlie a buried A, B and C horizon. The three A horizons are due to overbank sedimentation. The low terrace at 231+30-S10 includes three A horizons overlying a C horizon. The three A horizons are 43 inches thick which is indicative of sedimentation.

The intermediate terrace location at 231+30-S50 has two A horizons overlying a B and two C horizons. The A horizons are 16 inches thick, which does not show signs of sedimentation. The distance from the channel has probably limited sedimentation.

The high terrace location at 231+30-N10 has two A horizons overlying a buried A horizon and C horizon. The two A horizons overlying a buried A horizon is indicative of overbank sedimentation but the sedimentation may not be recent.

Soil samples for laboratory analysis will be collected in a floodplain and low terrace located south of the channel at 221+60. The low, intermediate, and high terrace will be sampled at 231+30. The low and intermediate terraces are located south of the channel and the high terrace is located north of the channel. Two additional samples will be collected from the high terrace north and south of the channel at 221+00 and 226+00.

Reach J (Station 232+00 to 250+00)

Four soil descriptions were completed within Reach J. Two soil descriptions were located on the floodplain, one on the low terrace, and one on the intermediate terrace. Analysis of the historical aerial photographs showed the channel has been relatively stable for a meandering portion of the stream; however, at a few locations the channel has migrated up to 25 feet since 1951.

The floodplain soil profiles are indicative of recent sedimentation. The soil profile at 249+00-W10 has two A horizons which are 35 inches thick which is indicative of sedimentation occurring during soil development. The A horizons overlie a C horizon. The floodplain at 249+40-N10 has a 22-inch thick A horizon overlying a well-sorted C horizon. The C horizon is an in channel deposit. The C horizon overlies a buried A horizon.

The low terrace soil description at 246+20-S10 includes 2 A horizons from ground surface to a depth of approximately 29 inches. The two A horizons are thick due to overbank sedimentation. The A horizons overlie a buried A and two C horizons.

The intermediate terrace location at 246+20-S50 has 2 A horizons overlying a C horizon. The A horizons are 16 inches thick and do not show signs of sedimentation. The distance from the channel has probably limited the sedimentation.

Soil samples for laboratory analysis will be collected from a high terrace north of the channel at 232+50 to determine if the 1951 channel has filled with PCB contaminated sediment. The intermediate terrace south of the channel at 235+60 and the intermediate terrace north of the channel at 236+40 will be sampled to determine if the 1951 channel has filled with PCB contaminated sediment. The high terrace adjacent to the channel at 235+60 will be representative of that surface. Low and intermediate terrace samples located south of the channel at 246+20 will represent similar surfaces in Reach J. The floodplain

will be sampled at 249+00 and 249+40 to determine if PCB contaminated sediment is present in the 1951 channel. Two additional samples will be collected from the high terrace north and south of the channel at 246+00 and 237+00, respectively.

Reach K (Station 250+00 to 266+00)

Seven soil descriptions were completed within Reach K. One soil description was located on the floodplain, four on the low terrace, and two on the intermediate terrace. Analysis of the historical aerial photographs showed the channel has been relatively stable for a meandering portion of the stream; however, there are a few locations where the channel has migrated a maximum of 25 feet since 1951.

The floodplain soil profile is indicative of recent sedimentation. The soil profile at 262+80 S10 has three A horizons totaling 43 inches thick, indicative of sedimentation occurring during soil development. The A horizons overlie B and C horizons. The C horizon is a clay loam. The soil profile, to a depth of 58 inches, does not include sand or pebbles that would indicate this was an in-channel area. This floodplain has been adjacent to the channel for a long period of time.

Two low terrace soil descriptions include two or three A horizons from ground surface to a depth of approximately 40 inches. The A horizons are thick due to overbank sedimentation during soil development. The A horizons overlie C horizons in both profiles. At 254+00-N20, the C horizon is clay loam. The clay loam indicates a period of ponded water for the clay particles to be deposited. At 258+00-W10, the C horizon is fine loamy sand underlain by gravel, indicative of a former channel area. The low terrace at 253+30-S50 has a 4-inch A horizon overlying a clay loam C horizon. This is an area of former agriculture production and the A horizon has been eroded over the years. This profile does not show sedimentation. The low terrace at 262+80-S30 is adjacent to a floodplain. This location has two A horizons which are 18 inches thick. The underlying C horizons are angular gravel and fine sandy loam. This is a former channel or point bar deposit.

The intermediate terrace locations are very different profiles due to their proximity to the stream. At 255+30-S10, this terrace is adjacent to a low terrace and shows no evidence of sedimentation. The profile has a 10 inch A horizon overlying a clay loam C horizon. The intermediate terrace at 262+80-N10 is adjacent to the channel. Based on the aerial photos, the channel has been stable in this area since 1951. The three A horizons have a total thickness of 40 inches, indicative of sedimentation during soil development. In addition, the A horizons overlie two buried A horizons. This core ended at 58 inches in the second buried A horizon.

Soil samples for laboratory analysis will be collected from three low terrace locations at 253+30 to determine if the 1951 channel has filled with PCB contaminated sediment. The low terrace west of the channel at 258+00 will be sampled due to the thickness of the A horizons that indicate sedimentation has occurred during soil development. The floodplain and intermediate terrace located at 262+80 will be sampled due to thick A horizons on the floodplain and intermediate terrace. The intermediate terrace is representative of similar surfaces adjacent to the channel in Reach K. Two low terrace and one intermediate terrace samples will be used to characterize the former oxbow channel at 263+80. Two additional samples will be collected from the high terrace north and south of the channel at 253+30 and 260+80, respectively.

Reach L (Station 266+00 to 284+00)

Eight soil descriptions were completed within Reach L. Two soil descriptions were located on the low terrace, four on the intermediate terrace, and two on the high terrace. Analysis of the historical aerial

photographs showed the channel has been relatively stable; however, there are four locations where the 1951 channel was present outside the existing channel.

The two low terrace soil descriptions include two A horizons from ground surface to a depth of approximately 20 inches. This is a natural thickness for A horizons and does not indicate sedimentation during soil development. At 274+40-S5, the two C horizons underlying the A horizons are clay loam. The clay loam indicates a period of ponded water for the clay particles to be deposited. This location appears to be stable with little sedimentation. At 281+80-S5, the two surface A horizons overlie a buried A horizon and a clay loam C horizon. This is a portion of the stream that shows the 1951 channel was south of the existing channel. Although the soil profile does not indicate a channel bed, the buried A horizon indicates sedimentation has occurred during soil development.

The intermediate terrace locations at 268+70 are very different profiles due to their setting relative to a meander bend. One location is 10 feet east of the channel on the inside of a meander bend and the other is 10 feet west of the channel on the outside of the same meander. The soil profile at E10 has three A horizons totaling 41 inches thick, overlying a clay loam C horizon. The soil profile at W10 has two A horizons to a depth of 19 inches overlying two C horizons. The E10 location has evidence of sedimentation due to channel migration whereas the W10 location does not. The intermediate terrace at 274+40-S30 has three A horizons to a depth of 28 inches overlying a silty clay loam C horizon. Although the three A horizons are present, 28 inches thick is not abnormal in a former plow zone. The intermediate terrace at 281+80-S25 has three A horizons totaling 30 inches thick. The A horizons overlie a clay loam C horizon. This location does not show signs of recent sedimentation.

Two high terrace locations were examined, one at 268+70-E30 and 281+80-S75. At 268+70-E30, the surface A horizon has clay skins which are indicative of clay movement downward in the soil profile. Because clay skins are not present at the surface, this means an overlying A horizon has been eroded away due to agricultural practices. The underlying A horizon is 24 inches thick, indicative of sedimentation during soil development. Sedimentation is likely at this location because it is the inside of a meander bend and the 1951 channel is mapped on the aerial photos as being within 15 feet of this location. Below the two A horizons lie B and C horizons. The high terrace at 281+80-S75 is a typical upland soil profile consisting of two A horizons to a depth of 14 inches and a clay loam C horizon. This profile does not show evidence of sedimentation.

Soil samples for laboratory analysis will be collected from an intermediate terrace and high terrace transect at 268+70 to determine if the 1951 channel has filled with PCB contaminated sediment. The intermediate terrace at 272+00 will be sampled as a representative location where the intermediate terrace is adjacent to the stream. The intermediate terrace at 276+00 will be sampled due to the location of the 1951 channel and the potential for sedimentation in that channel. The low and intermediate terraces on the south side of the channel at 281+80 and the intermediate terrace north of the channel at 282+50 will be sampled to determine if the 1951 channel has filled with PCB contaminated sediment and to obtain a representative intermediate terrace location for Reach L. Four additional samples will be collected from the high terrace. Two west of the channel at 267+00 and 277+00 and two east of the channel at 272+00 and 279+50.

Reach M (Station 284+00 to 304+00)

Six soil descriptions were completed within Reach M. One soil description was located on the low terrace and five on the intermediate terrace. Analysis of the historical aerial photographs showed the channel has been stable; however, the meanders that begin at 295+00 show areas where the 1951 channel was present outside the existing channel.

The low terrace soil description south of the channel at 299+90-S15 includes three A horizons from ground surface to a depth of approximately 42 inches. The A horizons are thick due to overbank sedimentation during soil development. A buried A horizon and clay loam C horizon underlay the three A horizons. This soil profile does not show evidence of a former channel but is indicative of sedimentation above the buried A horizon.

The intermediate terrace locations have similar soil profiles that consist of two or three A horizons overlying a buried A horizon and a silty clay loam or clay loam C horizon. The two or three A horizons vary in thickness from 19 to 40 inches. The buried A horizon has an increase in organic matter from the overlying A horizons. The 293+30-S10 location had a well sorted fine sand C horizon between three A horizons and the buried A horizon. The well sorted sand is indicative of a running water channel setting. At 293+30-S30, the soil profile included three A horizons overlying a silty clay loam C horizon. This location is a depression on the intermediate terrace and is located at the approximate location of the 1951 channel. The soil profile does not show any evidence of a channel deposit.

Soil samples for laboratory analysis will be collected from an intermediate terrace at 289+00 to represent the intermediate terrace adjacent to the channel on the west side of the stream. Samples will be collected from two intermediate locations (south) and high terrace (north) transect at 293+30 to determine if the 1951 channel has filled with PCB contaminated sediment and to have a sample from the high terrace adjacent to the channel. The low and intermediate terraces on the south side of the channel at 299+90 will be sampled to determine if the 1951 channel has filled with PCB contaminated sediment. Four additional samples will be collected from the high terrace. Two west of the channel at 290+00 and 301+00 and two east of the channel at 290+00 and 300+00.

Reach N (Station 304+00 to 318+00)

Two soil descriptions were completed within Reach N. One soil description was located on the low terrace and one on the intermediate terrace. Analysis of the historical aerial photographs showed the channel has been stable except in the meanders at 305+00 and 308+00 where the 1951 channel is outside of the existing channel. The channel was not visible in the 1951 aerial photograph due to ponding in the area from approximately 310+00 to 325+00.

The low terrace soil description at 317+00-N5 includes two A horizons from ground surface to a depth of approximately 13 inches. The A horizons overlie a buried A and C horizon. This low terrace location represents the low terrace found on the north and east side of Pine Creek.

The intermediate terrace location at 317+00-S5 has three A horizons overlying a buried A horizon and a clay loam C horizon. The A horizons are 24 inches thick. The A horizons do not show signs of sedimentation. The intermediate terrace is expansive on the west side of the stream channel.

Soil samples for laboratory analysis will be collected at two locations on the intermediate terrace at 304+50 due to the tight inside meander bend. The locations will show the contrast in sedimentation with distance from the stream. A sample will be collected from the low terrace locations at 305+90 and 308+20, and the intermediate terrace at 307+30 to determine if the 1951 channel has filled with PCB contaminated sediment. Samples will be collected from the low and intermediate terraces north and south respectively at 317+00. These samples will be representative of the terraces found adjacent to the channel in Reach M. Two additional samples will be collected from the intermediate and low terraces west of the channel at 311+00 and east of the channel at 313+00, respectively.

Reach O (Station 318+00 to 331+00)

One soil description was completed within Reach O. The soil description was located on the low terrace. Analysis of the historical aerial photographs showed the channel has been stable except between 325+00 and 327+00 where the 1951 channel is outside of the existing channel. The channel was not visible in the 1951 aerial photograph due to ponding in the area from approximately 310+00 to 325+00.

The low terrace soil description at 323+50-N10 includes two A horizons from ground surface to a depth of approximately 21 inches. The A horizons overlie a buried A and C horizon. This low terrace location is on the inside of a meander bend and should be subject to more sedimentation than other low terrace locations.

A soil sample for laboratory analysis will be collected at transect 324+00 on the low terrace, representing the terraces found adjacent to the channel in Reach O. A sample will be collected at 326+80 on the intermediate terrace to determine if the 1951 channel was located south of the existing channel and if so, whether the former channel filled with PCB contaminated sediment. A sample will be collected from the low terrace at 329+00. This sample will be representative of the low terraces adjacent to the large wetland areas in Reach O. Two additional samples will be collected from the high and low terraces north and south of the channel at 327+00 and 328+00, respectively.

Reach P (Station 331+00 to 342+00)

Three soil descriptions were completed within Reach P. One soil description was located on the low terrace and two on the intermediate terrace. Analysis of the historical aerial photographs showed the channel has been stable since 1951.

The low terrace soil description at 334+30-S5 includes two A horizons from ground surface to a depth of approximately 19 inches. The A horizons overlie two buried A horizons and a C horizon. The surface A horizons are indicative of sedimentation occurring during soil development because they are formed in a setting adjacent to the existing channel that is affected by the ponding of the Hayton dam. This location's hydrology is wetter now than prior to the placement of the dam.

The intermediate terrace location at 334+30-S20 has three A horizons overlying a buried A horizon and a C horizon. The A horizons are 33 inches thick which shows signs of sedimentation. The intermediate terrace at 340+40-N10 includes two A horizons overlying a C horizon, a buried A horizon and a second C horizon. The two A horizons and uppermost C horizon overlying a buried A horizon is indicative of overbank sedimentation, but the sedimentation may not be recent.

Soil samples for laboratory analysis will be collected on the low and intermediate terraces located south of the channel at 334+30. The intermediate terrace will be sampled at 340+40. Three additional samples will be collected from the high terrace north and south of the channel. The high terrace sample north of the channel is at 338+00. The high terrace samples south of the channel are located at 335+00 and 339+00.

CONCLUSIONS

The aerial photograph review and geomorphological characterization have led to a targeted sampling plan. Because the focus is on depositional areas, the number of samples is reduced and the reliability in extrapolating data is increased because it is done on the basis of the geomorphologic model. The aerial photographs were used to determine the historic location of the stream channel. In a meandering stream situation, this information was helpful to target areas that have shown historic lateral channel migration which, in turn, were used to determine areas of deposition.

The geomorphological characterization for a stream is developed using a number of parameters that provide information about the stream's setting. The longitudinal profile is used to determine the channel gradient which provides information about stream velocity. The stream velocity dictates the areas of erosion or deposition. The stream geomorphology provides information about the amount of channel migration and terrace development. The terrace development provides information about the amount of channel migration and the potential for erosion and deposition areas. The soil profile provides information about the degree of soil development, and whether erosion or sediment deposition has occurred at the location. A comparison of soil profile information can be used to determine if similar terraces have had similar levels of soil development.

Field investigation is used to determine the existing geomorphology of the channel, floodplain, and terraces, and to ground truth information obtained from the aerial photos. The samples that will be collected as part of this sampling plan will be used to verify the relative age of depositional areas, and determine the vertical extent of PCB contamination. This information can be extrapolated to similar surfaces in each reach. Soil descriptions from different surfaces are used to determine the extent of recent deposition and to determine which surfaces have similar soil profiles. Similar soil profiles on the low terraces present within a Reach indicate the surfaces have undergone the same deposition or erosion factors.

Geomorphological data obtained in 2003 from soil descriptions in Reaches H through P have been used to select soil sample locations which target the areas of deposition/sedimentation. Implementation of this sampling plan will further define depositional areas as they relate to PCB impact. The PCB data from this sampling and analysis plan, together with existing geomorphologic information for OU3, will provide the information necessary to develop the remedial plan for OU3.

SCHEDULE

Given approval by WDNR on or before March 1, 2004, Tecumseh proposes to conduct this OU3 sampling and analysis during July 2004, when this largely wetland area will be dry enough for access. This sampling could be conducted earlier at the Department's discretion but we believe the nature of OU3 is such that access will be much more difficult if the sampling is conducted much earlier than July before spring high water level conditions subside. Weather permitting, the results of this field survey should be available on for before August 15, 2004.

ATTACHMENT A

FIGURES

Figures 1A and 1 through 9

ATTACHMENT B

SOIL CORE DATA SHEETS

ATTACHMENT C

Table TM1
SOIL SAMPLING PLAN

230 West Monroe Street
Suite 2370
Chicago, IL 60606

312.578.0870 PHONE
312.578.0877 FAX

www.TRCsolutions.com

October 11, 2011

Mr. Jim Baumann
Special Assistant to Bureau Director
Bureau of Watershed Management
Wisconsin Department of Natural Resources
101 S. Webster Street, Box 7921
Madison, WI 53707-7921

Ms. Jean Greensley
U.S. Environmental Protection Agency
Remediation and Reuse Branch
Land and Chemicals Division
77 W. Jackson Boulevard
Chicago, IL 60604-3511

Re: Characterization Sample Results
Operable Unit 3, Reaches N, O and P
Hayton Area Remediation Project

Dear Mr. Baumann and Ms. Greensley:

During our meeting on October 5, 2011, WDNR proposed that WDNR, EPA and TRC would review available information to determine data gaps in Reaches N, O and P of the Hayton Area Remediation Project, Operable Unit 3 (OU3) by October 20, 2011. WDNR requested that TRC provide recent sample results for Reaches N, O and P no later than October 12th.

Enclosed for your review are figures and tables that include all recent sample results for Reaches N, O and P. Electronic copies of this submittal are also being provided via email to James.Baumann@Wisconsin.gov and Greensley.Jean@epamail.epa.gov.

Based on the enclosed sample results, some of the proposed removal boundaries of Reaches N, O and P have been modified, as shown on Figures 1 through 3. TRC is currently collecting additional characterization samples in Reaches N, O and P to further characterize the areas.

Please contact me at (312) 578-0870, extension 8486, with any questions.

Sincerely,
TRC

Christopher D. Harvey, PE
Program Manager

Enclosures:
Figure 1 - Sample Results and Excavation Boundaries, Reach N
Figure 2 - Sample Results and Excavation Boundaries, Reach O
Figure 3 - Sample Results and Excavation Boundaries, Reach P
Table 1- Reach N Characterization Sample Results
Table 2- Reach O Characterization Sample Results
Table 3 – Reach P Characterization Sample Results

Table 1. Reach N Characterization Sample Results
Hayton Area Remediation Project

10/11/2011

Sample Name	Total PCBs (mg/kg)	Comments
RN 001L 0-6"	0.662	
RN 002L 0-6"	2.95	
RN 003L 0-6"	2.63	
RN 004L 0-6"	1.15	
RN 004L 6-12	4.62	
RN 005L 0-6"	2.79	
RN 005L 6-12"	2.0	
RN 006L 0-6"	1.57	
RN 006L 6-12"	2.11	
RN 007L 0-6"	1.38	
RN 008L 0-6"	0.87	
RN 008L 6-12"	2.17	
DUP 94	2.4	
RN 009L 0-6"	1.75	
RN 009L 6-12"	1.86	
RN 010L 0-6"	2.44	
RN 011L 0-6	2.53	
RN 011L 6-12	0.158 (J)	
RN 012L 0-6	5.79	
RN 013L 6-12	8.96	
RN 014L 0-6	6.71	
RN 015L 6-12	12.4	
DUP 106	8.21	
RN 016L 6-12	3.46	
RN 017L 0-6	8.11	
RN 017L 12-18	ROCK	
RN 017L 6-12	13.8	
RN 018L 0-6	10.9	
RN 018L 6-12	3.21	
RN 019L 0-6	3.83	
RN 020L 6-12	5.43	
RN 021L 0-6	0.936	
DUP 126	1.66	
RN 021L 6-12	0.121 (J)	
RN 022L 0-6	14.5	
RN 022L 6-12	0.975	
RN 023L 0-6	3.48	
RN 023L 6-12	9.09	
RN 024L 6-12	5.76	
RN 025L 0-6	4.65	
RN 025L 6-12	4.39	
RN 025L 12-18	22.2	
RN 500R 0-6"	0.797	
RN 501R 0-6"	0.544	
RN 501R 6-12"	0.086	
RN 502R 0-6"	1.51	

Table 1. Reach N Characterization Sample Results
Hayton Area Remediation Project

10/11/2011

Sample Name	Total PCBs (mg/kg)	Comments
RN 502R 6-12"	2.37	
RN 503R 0-6"	1.65	
RN 504R 0-6"	0.745	
RN 505R 0-6"	1.33	
RN 506R 0-6"	2.39	
RN 507R 0-6"	1.09	
RN 508R 0-6"	1.1	
RN 509R 0-6	1.09	
RN 509R 6-12	0.0602 (J)	
RN 510R 0-6	2.18	
RN 511R 0-6	1.09	
RN 512R 0-6	7.69	
RN 513R 0-6	2.44	
RN 514R 0-6	3.12	Collected near the top of the bank
RN 514R 6-12	1.21	Collected near the top of the bank
DUP 109	0.657	Collected near the top of the bank
RN 515R 6-12	0.191	
RN 516R 6-12	0.576	Collected near the top of the bank
RN 517R 0-6	0.748	
RN 518R 0-6	0.926	Collected near the top of the bank
RN 519R 0-6	0.79	
RN 520R 0-6	1.78	Collected near the top of the bank

(J) Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

Table 2. Reach O Characterization Sample Results
Hayton Area Remediation Project

10/11/2011

Sample Name	Total PCBs (mg/kg)	Comments
RO 001L 0-6"	1.77	
RO 002L 0-6'	3.92	
RO B003L 0-6"	2.6	
RO 004L 0-6"	3.19	Located at the top of the bank
RO 005L 0-6"	2.45	
RO 006L 0-6"	3.07	
RO 007L 0-6"	2.78	
RO 500R 6-12"	9.21	
DUP 103	9.59	
RO 501R 0-6"	8.74	
RO 502R 0-6"	1.02	
RO 503R 0-6"	7.3	
RO 504R 6-12"	4.37	
RO 505R 6-12"	6.59	
RO 506R 0-6"	4.91	
RO 507R 6-12	11.3	
DUP 130	14.9	
RO 508R 0-6	0.732	

(J) Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

Table 3. Reach P Characterization Sample Results
Hayton Area Remediation Project

10/11/2011

Sample Name	Total PCBs (mg/kg)	Comments
RP 001L 0-6"	6.0	
RP 002L 0-6"	8.41	
RP 002L 6-12"	13.3	
DUP 104	12.2	
RP 003L 0-6"	4.38	Located at the top of the bank
RP 004L 0-6"	7.28	
RP 005L 0-6"	4.45	
RP 006L 6-12"	6.05	
DUP 105	2.26	
RP 007L 0-6	2.13	Located at the top of the bank
RP 008L 0-6	5.9	
RP 008L 6-12	4.92	
RP 009L 0-6	3.08	
RP 009L 6-12	9.86	
RP 009L 12-18	<0.0437	
RP 009L 18-24	<0.0396	
DUP 120	<0.417	
RP 010L 0-6	3.15	Located at the top of the bank
RP 011L 0-6	0.915	
RP 012L 6-12	0.114 (J)	
RP 013L 6-12	4.54	
RP 014L 6-12	2.93	
RP 015L 0-6	1.12	
RP 016L 0-6	1.26	
RP 017L 0-6	2.54	
RP 018L 0-6	2.08	Located at the top of the bank
RP 018L 6-12	0.256	Located at the top of the bank
RP 019L 6-12	3.69	
RP 500R 0-6"	4.58	
RP 501R 0-6"	1.49	
RP 502R 0-6"	5.55	
RP 503R 0-6"	2.96	
RP 504R 0-6"	4.39	
RP 504R 6-12"	2.78	
DUP 121	4.32	
RP 505R 0-6"	4.56	
RP 506R 0-6	7.46	
RP 507R 6-12	2.79	
RP 508R 0-6	1.58	

(J) Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

TABLE TM1
HARP OU3 Sediment Sampling
Sediment Sampling to Identify PCB Deposition Areas

Location	Old Name	New Name	Notes	Purpose			Media	Surface Represented	Analytical Method	Sediment Classification	Protocol [4]					Target Sample Interval[5]
				Area Delineation[1]	Field QA [2] [3]	Resample					GeoProbe	Sampling Tube and CAB	Bucket Auger	Piston Sampler	Hand Core	
Reach L		RL-267+00-W100	SWAC				Overbank Sediment	HighTerrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
		RL-268+70-E30					Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RL-268+70-E5					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
	WDNR-012-93	RL-270+00-IC-RS	Sampled May '03 [6]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RL-272+00-E100	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
		RL-272+00-W5					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
	FVD-RI-SD29	RL-275+80-IC-RS	Sampled May '03 [6]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RL-276+00-E5					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RL-277+30-W100	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
	WDNR-011-93	RL-279+00-IC-RS	Sampled May '03 [6]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
	WDNR-011-93	RL-279+00-IC-RS-DUP	Sampled May '03 [6]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	NA						SAME AS ORIG.
		RL-279+50-E100	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
		RL-281+80-S15					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-2
		RL-281+80-S5					Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-2
		RL-281+80-S5-....DUP					Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	NA						SAME AS ORIG.
		RL-282+50-N25					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.4	USCS [6]						0-2
Reach M	WDNR-010-93	RM-285+00-IC-RS	Sampled May '03 [6]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RM-289+00-W10					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-2
		RM-290+00-E100	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
		RM-290+00-W100	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
	WDNR-009-93	RM-291+00-IC-RS	Sampled May '03 [6]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RM-293+30-N5					Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
		RM-293+30-S30					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-2
		RM-293+30-S5					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-2
	WDNR-008-93	RM-296+90-IC-RS	Sampled May '03 [6]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RM-299+00-E100	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
		RM-299+90-S15					Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RM-299+90-S25					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RM-301+00-S100	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
	WDNR-007-93	RM-302+70-IC-RS	Sampled May '03 [6]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
Reach N		RN-304+50-S30					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RN-304+50-S5					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RN-304+50-S5-.....-DUP					Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	NA						SAME AS ORIG.
		RN-305+90-N10					Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RN-307+30-S10					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RN-308+20-N10					Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
	WDNR-006-93	RN-308+80-IC-RS	Sampled May '03 [6]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RN-311+00-W100	SWAC				Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
		RN-313+00-E100	SWAC				Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
	WDNR-005-93	RN-314+90-IC-RS	Sampled May '03 [6]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RN-317+00-N5					Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RN-317+00-S5					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3

TABLE TM1
HARP OU3 Sediment Sampling
Sediment Sampling to Identify PCB Deposition Areas

Location	Old Name	New Name	Notes	Purpose			Media	Surface Represented	Analytical Method	Sediment Classification	Protocol [4]					Target Sample Interval[5]
				Area Delineation[1]	Field QA [2] [3]	Resample					GeoProbe	Sampling Tube and CAB	Bucket Auger	Piston Sampler	Hand Core	
Reach O	WDNR-004-93	RO-320+80-IC-RS	Sampled May '03 [8]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RO-324+00-E5					Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-2
		RO-326+80-W20					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-2
		RO-327+00-N50	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-2
		RO-328+00-S100	SWAC				Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
	WDNR-002-93	RO-328+20-IC-RS	Sampled May '03 [8]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RO-329+00-S10					Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
	WDNR-0021-93	RO-330+20-IC-RS	Sampled May '03 [8]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
	WDNR-0021-93	RO-330+20-IC-RS-DUP	Sampled May '03 [8]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
Reach P	FVD-RI-SD32	RP-331+90-IC-RS	Sampled May '03 [8]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RP-334+30-S20					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RP-334+30-S5					Overbank Sediment	Low Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1.5
		RP-335+00-S100	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
	FVD-RI-SD33	RP-337+90-IC-RS	Sampled May '03 [8]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RP-338+00-N100	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
		RP-339+00-S100	SWAC				Overbank Sediment	High Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1
		RP-340+40-N5					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-1.5

NOTES:

[1] Contaminated Area Soil/Sediment delineation.

[2] Field Duplicates were scoped for an overall frequency of 1 per 20 investigative samples. During the May 2003 in-channel sample event (see note 8 below), two duplicates were collected over the 25 samples as noted in the table. For the OU3 off-channel sampling, 5 additional duplicates are proposed for the 83 samples.

[3] Field rinsate blank samples (Field Blanks) will be collected from the stainless steel bowl and spoon or trowel mixing devices at a rate of one per twenty samples. Distilled water will be poured over a decontaminated stainless steel bowl and spoon or trowel and into a sample bottle for the analysis of PCBs. Additionally, for each piece of chemical analysis sampling equipment that does not utilize a CAB liner (dredge, bucket auger, and spade), one Field Blank will be collected per event that equipment was used by pouring distilled water over the decontaminated equipment and into a sample bottle for the analysis of PCBs.

[4] Protocol defined in Project QAPP.

[5] Sediment samples collected from top of sediment through depth of river channel sediments.

[6] Unified Soil Classification System (USCS). Protocol defined in Project QAPP

[7] In-channel (IC) sediments (originally presented in the May 5, 2003, *HARP OU3 In-Channel Sediment Sampling* - See note 8 below) have been renamed for presentation purposes to avoid confusion over the originally proposed "Silt" and "Sand" suffixes. The predominant grain size of the actual sample location in many instances did not contain the anticipated sediment type. Therefore, the suffixes of "Silt" and "Sand" have been removed from the Table and the mapping in this memorandum.

[8] Earth Tech performed in-channel sampling in OU3, Reaches H through S, in May 2003. These sample locations were presented in the *HARP OU3 In-Channel Sediment Sampling* spreadsheet sent to Jim Baumann of WDNR by Earth Tech (05/07/03). The results of this sampling will be submitted under separate cover.

--- No sediment classification available for this location.

TABLE TM1
HARP OU3 Sediment Sampling
Sediment Sampling to Identify PCB Deposition Areas

Location	Old Name	New Name	Notes	Purpose			Media	Surface Represented	Analytical Method	Sediment Classification	Protocol [4]					Target Sample Interval[5]
				Area Delineation[1]	Field QA [2] [3]	Resample					GeoProbe	Sampling Tube and CAB	Bucket Auger	Piston Sampler	Hand Core	
OU3																
Reach Q		RQ-347+50-W25					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RQ-358+00-S25					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RQ-358+00-S75					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
Reach R		RR-364+50-N25					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
		RR-370+00-S100					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS [6]						0-3
	FVO-RI-SD35	RR-374+30-IC-RS	Sampled May '03 [8]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
Reach S		RS-387+00-IC	Sampled May '03 [8]				Sediment	In-Channel	USEPA 8082-WIS, USEPA 160.3	USCS [6]						(5)
		RS-389+00-N50					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS (6)						0-3
		RS-389+00-N50..DUP					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS (6)						0-3
		RS-389+00-S50					Overbank Sediment	Int. Terrace	USEPA 8082-WIS, USEPA 160.3	USCS (6)						0-3
Field		RO-320+80-IC-RINS	Sampled May '03 [8]				Rinse	Sample collected if needed (3)	Method USEPA 8082-WIS							
Rinsate		RS-387+00-IC-RINS	Sampled May '03 [8]				Rinse	Sample collected if needed (3)	Method USEPA 8082-WIS							
Blanks[3]		BLANK-BOWL-3-"date"					Rinse	Sample collected if needed (3)	Method USEPA 8082-WIS							
		BLANK-BOWL-4-"date"					Rinse	Sample collected if needed (3)	Method USEPA 8082-WIS							
		BLANK-PDREDGE-1-"date"					Rinse	Sample collected if needed (3)	Method USEPA 8082-WIS							
		BLANK-EDREDGE-1-"date"					Rinse	Sample collected if needed (3)	Method USEPA 8082-WIS							
		BLANK-AUGER-1-"date"					Rinse	Sample collected if needed (3)	Method USEPA 8082-WIS							
		BLANK-SPADE-1-"date"					Rinse	Sample collected if needed (3)	Method USEPA 8082-WIS							
		BLANK-"equipment"-1-"date"					Rinse	Sample collected if needed (3)	Method USEPA 8082-WIS							

NOTES:

[1] Contaminated Area Soil/Sediment delineation.

[2] Field Duplicates were scoped for an overall frequency of 1 per 20 investigative samples. During the May 2003 in-channel sample event (see note 8 below), two duplicates were collected over the 25 samples as noted in the table. For the OU3 off-chann

[3] Field rinsate blank samples (Field Blanks) will be collected from the stainless steel bowl and spoon or trowel mixing devices at a rate of one per twenty samples. Distilled water will be poured over a decontaminated stainless steel bowl and spoon o

[4] Protocol defined in Project QAPP.

[5] Sediment samples collected from top of sediment through depth of river channel sediments.

[6] Unified Soil Classification System (USCS). Protocol defined in Project QAPP

[7] In-channel (IC) sediments (originally presented in the May 5, 2003, *HARP OU3 In-Channel Sediment Sampling* - See note 8 below) have been renamed for presentation purposes to avoid confusion over the originally proposed "Silt" and "Sand" suffixes.

[8] Earth Tech performed in-channel sampling in OU3, Reaches H through S, in May 2003. These sample locations were presented in the *HARP OU3 In-Channel Sediment Sampling* spreadsheet sent to Jim Baumann of WDNR by Earth Tech (05/07/03). The results

--- No sediment classification available for this location.

TRC

230 West Monroe Street
Suite 2370
Chicago, IL 60606

312.578.0870 PHONE
312.578.0877 FAX

www.TRCsolutions.com

October 11, 2011

Mr. Jim Baumann
Special Assistant to Bureau Director
Bureau of Watershed Management
Wisconsin Department of Natural Resources
101 S. Webster Street, Box 7921
Madison, WI 53707-7921

Ms. Jean Greensley
U.S. Environmental Protection Agency
Remediation and Reuse Branch
Land and Chemicals Division
77 W. Jackson Boulevard
Chicago, IL 60604-3511

Re: Characterization Sample Results
Operable Unit 3, Reaches N, O and P
Hayton Area Remediation Project

Dear Mr. Baumann and Ms. Greensley:

During our meeting on October 5, 2011, WDNR proposed that WDNR, EPA and TRC would review available information to determine data gaps in Reaches N, O and P of the Hayton Area Remediation Project, Operable Unit 3 (OU3) by October 20, 2011. WDNR requested that TRC provide recent sample results for Reaches N, O and P no later than October 12th.

Enclosed for your review are figures and tables that include all recent sample results for Reaches N, O and P. Electronic copies of this submittal are also being provided via email to James.Baumann@Wisconsin.gov and Greensley.Jean@epamail.epa.gov.

Based on the enclosed sample results, some of the proposed removal boundaries of Reaches N, O and P have been modified, as shown on Figures 1 through 3. TRC is currently collecting additional characterization samples in Reaches N, O and P to further characterize the areas.

Please contact me at (312) 578-0870, extension 8486, with any questions.

Sincerely,
TRC

Christopher D. Harvey, PE
Program Manager

Enclosures: *Figure 1 - Sample Results and Excavation Boundaries, Reach N*
Figure 2 - Sample Results and Excavation Boundaries, Reach O
Figure 3 - Sample Results and Excavation Boundaries, Reach P
Table 1- Reach N Characterization Sample Results
Table 2- Reach O Characterization Sample Results
Table 3 – Reach P Characterization Sample Results

Table 1. Reach N Characterization Sample Results
Hayton Area Remediation Project

10/11/2011

Sample Name	Total PCBs (mg/kg)	Comments
RN 001L 0-6"	0.662	
RN 002L 0-6"	2.95	
RN 003L 0-6"	2.63	
RN 004L 0-6"	1.15	
RN 004L 6-12	4.62	
RN 005L 0-6"	2.79	
RN 005L 6-12"	2.0	
RN 006L 0-6"	1.57	
RN 006L 6-12"	2.11	
RN 007L 0-6"	1.38	
RN 008L 0-6"	0.87	
RN 008L 6-12"	2.17	
DUP 94	2.4	
RN 009L 0-6"	1.75	
RN 009L 6-12"	1.86	
RN 010L 0-6"	2.44	
RN 011L 0-6	2.53	
RN 011L 6-12	0.158 (J)	
RN 012L 0-6	5.79	
RN 013L 6-12	8.96	
RN 014L 0-6	6.71	
RN 015L 6-12	12.4	
DUP 106	8.21	
RN 016L 6-12	3.46	
RN 017L 0-6	8.11	
RN 017L 12-18	ROCK	
RN 017L 6-12	13.8	
RN 018L 0-6	10.9	
RN 018L 6-12	3.21	
RN 019L 0-6	3.83	
RN 020L 6-12	5.43	
RN 021L 0-6	0.936	
DUP 126	1.66	
RN 021L 6-12	0.121 (J)	
RN 022L 0-6	14.5	
RN 022L 6-12	0.975	
RN 023L 0-6	3.48	
RN 023L 6-12	9.09	
RN 024L 6-12	5.76	
RN 025L 0-6	4.65	
RN 025L 6-12	4.39	
RN 025L 12-18	22.2	
RN 500R 0-6"	0.797	
RN 501R 0-6"	0.544	
RN 501R 6-12"	0.086	
RN 502R 0-6"	1.51	

Table 1. Reach N Characterization Sample Results
Hayton Area Remediation Project

10/11/2011

Sample Name	Total PCBs (mg/kg)	Comments
RN 502R 6-12"	2.37	
RN 503R 0-6"	1.65	
RN 504R 0-6"	0.745	
RN 505R 0-6"	1.33	
RN 506R 0-6"	2.39	
RN 507R 0-6"	1.09	
RN 508R 0-6"	1.1	
RN 509R 0-6	1.09	
RN 509R 6-12	0.0602 (J)	
RN 510R 0-6	2.18	
RN 511R 0-6	1.09	
RN 512R 0-6	7.69	
RN 513R 0-6	2.44	
RN 514R 0-6	3.12	Collected near the top of the bank
RN 514R 6-12	1.21	Collected near the top of the bank
DUP 109	0.657	Collected near the top of the bank
RN 515R 6-12	0.191	
RN 516R 6-12	0.576	Collected near the top of the bank
RN 517R 0-6	0.748	
RN 518R 0-6	0.926	Collected near the top of the bank
RN 519R 0-6	0.79	
RN 520R 0-6	1.78	Collected near the top of the bank

(J) Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

Table 2. Reach O Characterization Sample Results
Hayton Area Remediation Project

10/11/2011

Sample Name	Total PCBs (mg/kg)	Comments
RO 001L 0-6"	1.77	
RO 002L 0-6'	3.92	
RO B003L 0-6"	2.6	
RO 004L 0-6"	3.19	Located at the top of the bank
RO 005L 0-6"	2.45	
RO 006L 0-6"	3.07	
RO 007L 0-6"	2.78	
RO 500R 6-12"	9.21	
DUP 103	9.59	
RO 501R 0-6"	8.74	
RO 502R 0-6"	1.02	
RO 503R 0-6"	7.3	
RO 504R 6-12"	4.37	
RO 505R 6-12"	6.59	
RO 506R 0-6"	4.91	
RO 507R 6-12	11.3	
DUP 130	14.9	
RO 508R 0-6	0.732	

(J) Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

Table 3. Reach P Characterization Sample Results
Hayton Area Remediation Project

10/11/2011

Sample Name	Total PCBs (mg/kg)	Comments
RP 001L 0-6"	6.0	
RP 002L 0-6"	8.41	
RP 002L 6-12"	13.3	
DUP 104	12.2	
RP 003L 0-6"	4.38	Located at the top of the bank
RP 004L 0-6"	7.28	
RP 005L 0-6"	4.45	
RP 006L 6-12"	6.05	
DUP 105	2.26	
RP 007L 0-6	2.13	Located at the top of the bank
RP 008L 0-6	5.9	
RP 008L 6-12	4.92	
RP 009L 0-6	3.08	
RP 009L 6-12	9.86	
RP 009L 12-18	<0.0437	
RP 009L 18-24	<0.0396	
DUP 120	<0.417	
RP 010L 0-6	3.15	Located at the top of the bank
RP 011L 0-6	0.915	
RP 012L 6-12	0.114 (J)	
RP 013L 6-12	4.54	
RP 014L 6-12	2.93	
RP 015L 0-6	1.12	
RP 016L 0-6	1.26	
RP 017L 0-6	2.54	
RP 018L 0-6	2.08	Located at the top of the bank
RP 018L 6-12	0.256	Located at the top of the bank
RP 019L 6-12	3.69	
RP 500R 0-6"	4.58	
RP 501R 0-6"	1.49	
RP 502R 0-6"	5.55	
RP 503R 0-6"	2.96	
RP 504R 0-6"	4.39	
RP 504R 6-12"	2.78	
DUP 121	4.32	
RP 505R 0-6"	4.56	
RP 506R 0-6	7.46	
RP 507R 6-12	2.79	
RP 508R 0-6	1.58	

(J) Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit

2467000 E | 2467100 E | 2467200 E | 2467300 E | 2467400 E | 2467500 E | 2467600 E | 2467700 E | 2467800 E | 2467900 E | 2468000 E | 2468100 E

736600 N

736500 N

736400 N

736300 N

736200 N

736100 N

736000 N

735900 N

735800 N

735700 N

735600 N

735500 N

735400 N

735300 N

735200 N

735100 N

BEGIN REACH O
END REACH N

BEGIN REACH N
END REACH M

O102 0-12"
O201 0-6"
O101 0-6"
O202 0-12"
N206 0-6"
N6 0-7"
N205 0-6"
N105 0-6"
N106 0-12"
N107 0-6"
N204A 0-6"
N5 0-10"
N204 0-6"
N104 0-12"
N4 0-8"
N3 0-10"
N203 0-12"
N103 0-12"
N102 0-18"
N101 0-6"
N108 0-18"?
N201 0-12"
N1 0-8"
N109 0-12"
N110 0-6"

LEGEND

- CENTERLINE OF CREEK
- F2 — SOFT SEDIMENT EXCAVATION AREA
- 0–10" — AVERAGE SOFT SEDIMENT DEPTH INTERVAL OF EXCAVATION
- FLOOR SAMPLE LOCATION
- WALL SAMPLE LOCATION
- TSCA BOUNDARY SAMPLE
- POLYGON BOUNDARY LINE
- EXCAVATION BOUNDARY ALONG CREEK BANK
- 5 PPM EXCAVATION BOUNDARY
- SUBDIVIDER LINE FOR NON-TSCA EXCAVATION DEPTH INTERVALS
- 50 PPM EXCAVATION BOUNDARY (TSCA)
- SUBDIVIDER LINE FOR TSCA EXCAVATION DEPTH INTERVALS

NOTES:
1. COORDINATE SYSTEM IS NAD83, WISCONSIN STATE PLANE, SOUTH ZONE, US FT.

0 25 50 100
SCALE IN FEET

SAMPLE RESULTS AND EXCAVATION BOUNDARIES
REACH N

HAYTON AREA REMEDIATION PROJECT

DRAWN BY:	SPA	DATE:	10/10/2011
PROJECT NO:	107827	DWG FILE:	Sampling Presentation sheets

TRC
230 WEST MONROE STREET
SUITE 2370
CHICAGO, IL 60606
312-578-0870

FIGURE 1

2466100 E | 2466200 E | 2466300 E | 2466400 E | 2466500 E | 2466600 E | 2466700 E | 2466800 E | 2466900 E | 2467000 E | 2467100 E | 2467200 E

737400 N
737300 N
737200 N
737100 N
737000 N
736900 N
736800 N
736700 N
736600 N
736500 N
736400 N
736300 N
736200 N
736100 N
736000 N
735900 N

P2
0-10"
P201
0-6"
P1
0-11"
O4
0-12"
O3
0-18"
FIELD
INSPECT
O2
0-5"
O203
0-6"
O104
0-6"
O103
0-6" TSCA
O1
0-7"
O101
0-6"
O102
0-12"
O201
0-6"
O101
0-6"
O202
0-12"
N206
0-6"
N105
0-6"
N106
0-12"
BEGIN REACH O
END REACH O
BEGIN REACH N
END REACH N

N

LEGEND

- CENTERLINE OF CREEK
- F2 — SOFT SEDIMENT EXCAVATION AREA
- 0–10" — AVERAGE SOFT SEDIMENT DEPTH INTERVAL OF EXCAVATION
- FLOOR SAMPLE LOCATION
- WALL SAMPLE LOCATION
- TSCA BOUNDARY SAMPLE
- POLYGON BOUNDARY LINE
- EXCAVATION BOUNDARY ALONG CREEK BANK
- 5 PPM EXCAVATION BOUNDARY
- SUBDIVIDER LINE FOR NON-TSCA EXCAVATION DEPTH INTERVALS
- 50 PPM EXCAVATION BOUNDARY (TSCA)
- SUBDIVIDER LINE FOR TSCA EXCAVATION DEPTH INTERVALS

NOTES:
1. COORDINATE SYSTEM IS NAD83, WISCONSIN STATE PLANE, SOUTH ZONE, US FT.

0 25 50 100
SCALE IN FEET

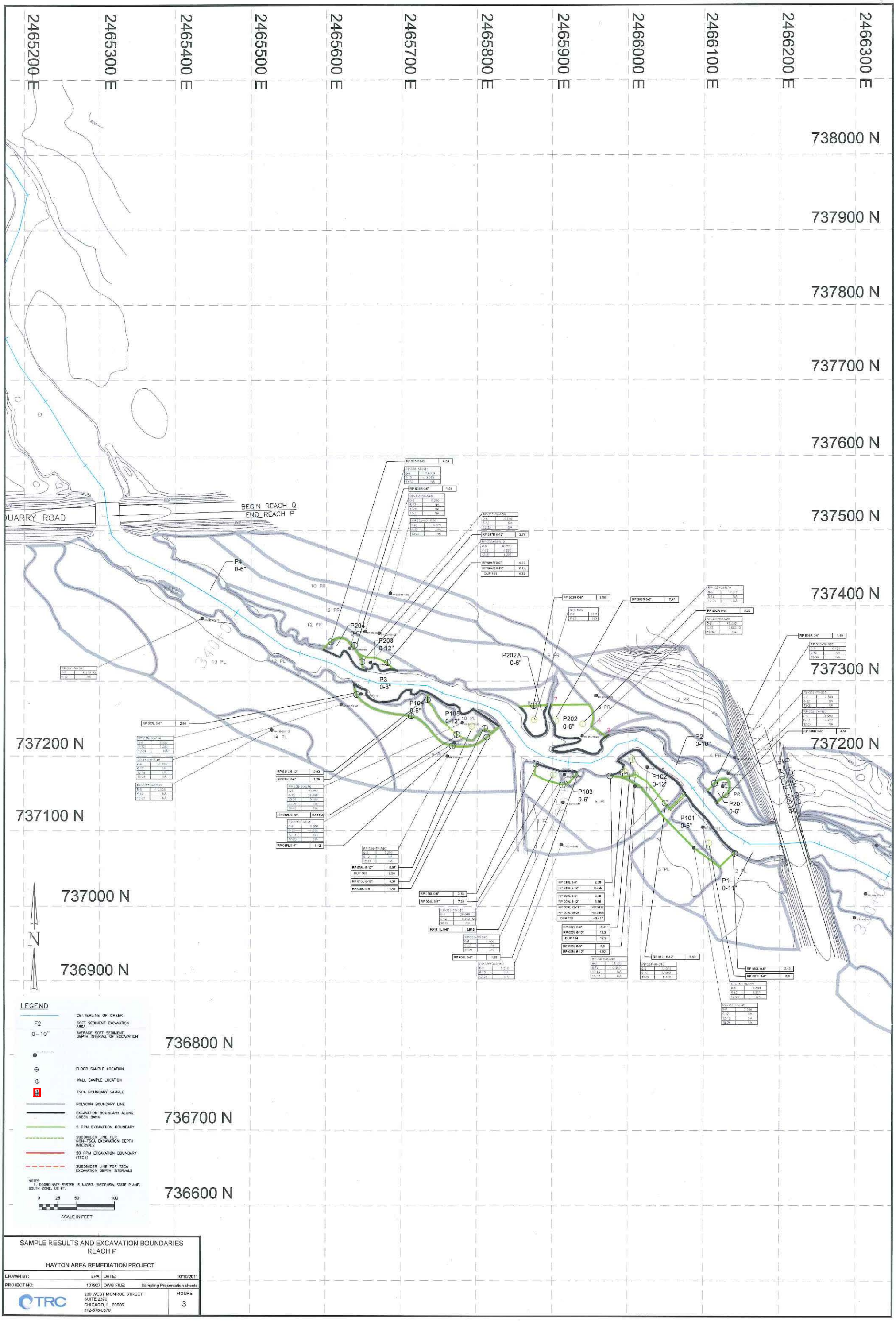
SAMPLE RESULTS AND EXCAVATION BOUNDARIES
REACH O

HAYTON AREA REMEDIATION PROJECT

DRAWN BY:	SPA	DATE:	10/10/2011
PROJECT NO:	107927	DWG FILE:	Sampling Presentation sheets

TRC
230 WEST MONROE STREET
SUITE 2370
CHICAGO, IL 60606
312-578-0870

FIGURE 2



SAMPLE RESULTS AND EXCAVATION BOUNDARIES
REACH P

HAYTON AREA REMEDIATION PROJECT

DRAWN BY:	SPA	DATE:	10/10/2011
PROJECT NO:	107927	DWG FILE:	Sampling Presentation sheets

TRC
230 WEST MONROE STREET
SUITE 2370
CHICAGO, IL 60606
312-578-0870

FIGURE
3

Locations that appear to be under-sampled. {Note: This list is prepared without the knowledge of where TRC may have collected step-out samples.

Western portion of 5NR	See lateral deposition sample above (H)
7NL upstream	At about 310+30-W20 (M) agree
7NL downstream	At about 312+50-W10 (M) agree
8NR downstream	See lateral deposition sample at 313+00-E10; upstream of 9NR (H) - sample @ meander bend between 304 & 304a
10NL upstream	At about 313+50-W30 (M) + 314+50 @ meander
12NL	**Downstream of 13NL; sample taken**
11NR - u/s & d/s samples, N110 - upland boundary,	5NL d/s, u/s @ 0-6/6-18 boundary,
7OL	See lateral deposition samples above
3OR	Downstream at about 320+00-e10
5OR	At about 322+80-E20
11OR	Upstream portion at about 327+30
1PR	Upstream and downstream of 2PR; TRC will likely claim recent samples cover;
3PR	Upstream portions; upstream end of P202 not identified
9PR	Between 8PR and 12PR
9PR	Near 341+00-N10
2PL	Upstream portion near 331+00-S10; sample taken 2.13
2PL	In internally drained area along road embankment (M)
11PR	Downstream portion near 339+70
10PL	Portion downstream of 11PL; included in removal area P104

well-mapped for this section

Selected locations where only the 0 to 6 inch depth was analyzed. Alternatively, simply state that all samples where only the 0 to 6 inch depth was analyzed need to be sampled.

RN-305+90-N90	
RN-305+90-S40	
RN-309+40-N10	
RN-311+00-W100	
RN-311+60-W40	
RN-313-00-E100	
RN-315+50-E10	
RN 315+50 - W40	
RO-319+60-N30	
RO-323+40-N50	
RO-327+00-N30	
RO-328+00-S100	
RO-328+70-N10	

Locations where the stream has moved laterally and deposition of PCBs on the inside of the meander is likely and where not previously sampled.

Approximate Location	Comment
310+80-E10	Within polygon 5NR I picked out the same ones for N so
313+00-E10	Within polygon 8NR we are in agreement – three for three
314+90-W10	Within polygon 10NL
322+00-E10	Within 5OR
323+00-W10	Within 5OL
324+70-W10	Within 7OL
325+00-E10	Within 5OL
325+70-W10	Within 7OL
333+40-E10	Within 3PR
triple transect @ 11 pr / 12 pr boundary	

Polygons Not Sampled – OU-3 Reaches N, O and P
JMG Comments in Orange

Polygon	Similar Polygon Identified in Original Sampling Plan and Results from Sampling Similar Polygon
6NL	4NL 8.4/39/0.22
9NL	1NL 16/0.91, but 9NL is farther away from the stream
13NL	1OR 6.4/2.6; **not fully sampled, but included in removal area**
9NR	7NR 13/0.11; **subsequently sampled and found 13.2/0.17**
11NR	**Far from stream and data from polygons around it is low (below 1)**
3OL	3OR 0.15/? away from stream
4OL – I see have sampled	5OR 31/1.9; **not sampled, but identified for removal to depth of 12 inches (floor PRV?)**
5OL	5OR 31/1.9
6OL	7OR <0.033/? away from stream
8OL	11OL 4/0.23 perpendicular to stream -- need to identify sample location; eastern half appears to be lower elevation
12OR	13OR 0.92/? away from stream
√1PL	1PR 10/4.4/?
3PL	8PL 0.21/? away from stream
5PL	7PL 20/01; sampled 3.08/9.86
10PL	12PL 8.8/2 -- appears to have been sampled 23/28/0.45
11PL	12PR 10/6; **sampled at one end at depth of 6 to 12 inches; identified for removal to 12 inches**
√12PL	11PR 13/0.043
√15PL	11PR 13/0.043
√16PL	14PL <0.036 away from stream
6PR	14PL <0.036 away from stream; TRC will claim that a sampled originally identified for 10PR falls within 6PR. If so, then 10PR is not sampled — I id as N/S - clearly in 6PR
√7PR	14PL <0.036 away from stream
8PR	3PR 12/0.083; **sampled 11.3; southern part identified for removal**

4PR - borderline w/ 1PR & 6PR → have to id as no samples

RP-332+70-S40 ✓	
RP-332+70-N35 ✓	
RP-336+70-60	
There are stains but conc	all low, under 1 ppm

Reach P

Poly u/s
1) 1pl ✓
2) 12pl ✓
3) 15pl ✓
4) 4pr [illegible]
5) [illegible]
4pr
✓5) 7pr
6) 10pr
7) 16pl ✓

Exc. limit
✓ 1) P101/2pl – RP 001L 0-6" 6.0ppm
✓ 2) P102 - 0-12"
RP002L 6-12" 13.3
[illegible]
✓ 3) P103 – 6pl
RP004L 0-6" 7.98 ppm
✓ 4) P105/10pl
RP006L 6-12" 6.05 ppm
dup. is 2.26
5) P202 RP502R 0-6" (5.55)
RP 506R 0-6" (7.46)

6" sample issue
1) RP-332+70-S40 ✗
2) RP-335+00-S100 (.210 ppm)
3) RP-336+70-S60 (2.3 ppm)
4) RP-338+00-S40 (.120)
5) RP-339+00-S100 (<.036)
6) RP-340+60-S10 (.1502)
✗ 7) RP-332+70-N35 (2.5)
8) RP-332+70-N50 (.170)
9) RP-335+00-N70 (.370)
10) RP-338+00-N50 (.780)
(P203) [illegible]
11) RP338+50-N40 (.260)
12) RP-338+00-N100 (.380)

Stream Reread
11pr

Under sampled
✓ 1) depression 2pl
2) 13pl – d/s
✓ 3) skinny u/s area of 3pr
4) 6pr – but away from stream flow – u/s & d/s
✓ 5) justif. excav. limits for P202 – upland & upstream
✗ 6) 1pr – upstream
✓ 7) 9pr – d/s
✓ 8) 11pr – tight meanders – also relates to strm reread
✓ 9) 12pr – tight meanders

1. 9NL not sampled -- yes, I failed to remove that one from the list. It will be deleted.

2. 11NR -- Please keep in mind that of the six samples you mention, three were not analyzed to a depth of more than 6 inches and RN-311+60-E10 is 13 mg/kg. The sample proposed for this polygon ended up 80 or so feet to the north. I'll discuss with Jean.

3. 4OL -- Please look again. The samples you cite appear to be in 2OL and not in 4OL. 4OL is rather small and abuts the stream.

4. 323+00-W10 -- Yes, you are correct, the location is within 2OL and not 5OL. I'll make the change.

5. 325+00-E10 -- Yes, you are correct, the location is within 5OR and not 5OL. I'll make the change.

6. 1PR -- please look again. It appears the two samples are within 2PR. The step out sample you mention was not analyzed at a depth greater than 6 inches. The original sample for 2PR seems to be at a different elevation than 1PR.

You question a number of locations identified where only the 0 to 6 inch depth was analyzed. Again, I'll discuss each one with Jean. Please keep in mind that state administrative rules require a full profile analysis. For step out samples we may agree that the original sample meets the requirements. However, these are original samples and not step out samples. The sample locations listed are a subset of locations that do not have a full profile. Each was based on some factor, such as proximity to the stream or a sample with a high concentration. For example, for RO-318+20-N80 there is a sample of 44 mg/kg within 30 feet.

Jim Baumann
Special Assistant, Bureau of Watershed Management
Wisconsin Department of Natural Resources
P. O. Box 7921
Madison, WI 53707
608/266-9277
james.baumann@wisconsin.gov

From: Harvey, Christopher (Chicago,IL-US) [mailto:CHarvey@trcsolutions.com]
Sent: Friday, October 21, 2011 10:09 AM
To: Baumann, James S - DNR; Greensley.Jean@epamail.epa.gov
Cc: Wildeman, Anna J (20109); Johnson, Deborah D - DNR; Rasmussen, Russell A - DNR; Danesh, Paymon (Chicago,IL-US)
Subject: RE: Draft List of Data Gaps -- HARP OU-3 Reaches N, O and P
Jim and Jean,

We have reviewed the draft list of proposed data gaps in HARP OU3 Reaches N, O and P that

RE: Draft List of Data Gaps -- HARP OU-3 Reaches N, O and P

Harvey, Christopher (Chicago,IL-US) 10/22/2011 03:25 PM
To: Baumann, James S - DNR, Jean Greensley
Cc: "Wildeman, Anna J (20109)", "Johnson, Deborah D - DNR", "Rasmussen, Russell A - DNR", "Danesh, Paymon (Chicago,IL-US)"

Jim,

Thank you for looking at these so quickly. I need further clarification regarding your ending comment about a full profile analysis. Where is a full profile analysis defined? Based on Wisconsin Administrative Code NR347.06, the number and location of sediment samples can be collaboratively specified based on the initial evaluation and the potential for contamination. In addition, in NR347.06(6)(d), "If previous sampling data or other adequate available information demonstrates that the possibility of contamination is negligible, analysis for any chemical may be waived, in writing, by the department."

Based on the data and limited potential for contamination, TRC proposes that the previously referenced locations with only 0-6" sample results are adequately characterized and do not require additional vertical sampling.

Regarding the other two areas we to recheck:

4OL: I think the source of confusion is that the boundaries of 4OL are drawn differently in the SAP versus the Technical Memorandum (it extends further upstream and downstream in the latter). TRC will collect additional samples at the requested location.

1PR: You are correct, existing samples are in 2PR. TRC will collect the requested samples.

If you have any questions, please contact me at 312-578-0870, ext. 8486.

Thank you,

Chris

From: Baumann, James S - DNR [mailto:James.Baumann@Wisconsin.gov]
Sent: Friday, October 21, 2011 11:51 AM
To: Harvey, Christopher (Chicago,IL-US); Greensley.Jean@epamail.epa.gov
Cc: Wildeman, Anna J (20109); Johnson, Deborah D - DNR; Rasmussen, Russell A - DNR; Danesh, Paymon (Chicago,IL-US)
Subject: RE: Draft List of Data Gaps -- HARP OU-3 Reaches N, O and P

Chris,

I'll contact Jean and go through each of your comments. This is why we sent it as a draft.

We will try to respond by the middle of next week. During the interim, there are a few that I can address right away and a few where I ask for you to look at again:

Reach N

Undefined

1) 21NL - Rock @ 12-18" RN 017L

2) 18NL - 6-12" - 9.09 ppm, nothing lower

3) 5NL - RN012L - 0-6" 5.79 ppm (N102) exc. limit is 6" sample taken @ 2NL/5NL boundary

4) 20R - RN 512R 0-6" 7.69, N206, for reach N10 boundary, exc. limit is 6" prev - notify [illegible] @ polygon

5) 12NL ~~polygon?~~ RN015L - 6-12" - 12.4 ppm

6) 10NL RN014L - 0-6 6.71 ppm, N107, exc. to 6", prv

7) 21NL RN024L - 6-12" - 5.76 ppm exc. limit is 12" - prev more char.

8) 5NL RN013L - 8.96 @ 6-12" - 0-12" exc. limit - prev., N103

9) 18NL RN025L - 12-18" 22.2 ppm - 0-18" removal - need char. sample

More sampling

1) ✓ 17 NL - sample @ cutoff - sample @ u/s & d/s

2) ✓ 8 NL sample @ meander bend between 204 & 204a

3) N110 - no samples to define upland boundary

4) N109 - u/s boundary - polygon sample to the w, note, RN023L to the east has 9.09 @ 6-12" (RN023L 6-12")

5) ✓ 5NL upland - one more sample d/s end/upland boundary

6) ✓ 7NL - long stretch w/samples by meander only - no u/s d/s data

7) ✓ 8NL - lg. polygon w/one sample only - it is low 0-6 → 2.2

8) ✓ ~~10NL - no u/s samples - there is slight meander - take there 315+00~~

9) 18NL - RN025L - 12-18 22.2 ppm - no removal id'd (above N109)

Reach N data gaps

No Samples in Polygons		Inc. Sampling in Polygons
x9 NL	13 NL x - removal to 6"	1NL
x6 NL		
8NR -	+9NR is removal to 6"	
~~11NR~~ 11NR -		

Undefined limits

1) ~~18 NL? - RN 023L - 6-12 2.09 ppm~~

2) 18 NL? - RN 025L - 12-18 22.2 ppm - no removal id'd (above N109)

3) ~~N109 - RN024L - 6 to 12 - 5.76 ppm~~

Removal is to 12" (prv or more clar.

4) ~~N102 - No bottom defined~~

4) N101 - 5.79 @ RN012L 0-6, exc. limit is 6"

sample taken @ 2NL/5NL boundary

(prv)

5) 5NL upland - bit arbitrary ~~but~~ → one more sample - d/s end / upland boundary

6) N103 - RN013L 8.96 @ 6-12 → to 12 excavation → prv

7) 7NL - long stretch w/ samples by meander only - no u/p or d/s data

8) 8NL - large polygon w/ one sample only - it is low 0-6 → 2.2

9) 10 NL - No d/s samples - there is a slight meander - take there 315+00

10) N107 - RN 014L - 0-6 → 6.71 - exc. to 6", (prv)

11) N206 - RN512R 0-6 → 7.69 → 0-6 exc. - prv - also another line between N206 & 0202 (need u/s boundary) → justify

More Definition

1) N110 - No samples to def. upland boundary

2) N109 - upland boundary - polygon? sample to the to, not east RN 023L to the 2 has 2.09 @ 6-12" (RN 023L 6-12")

11) 17 hr - sample @ putout · sample u/s & d/s
12) ~~8 hr sample by meander bend between 204 & 204a~~
~~12) H204 0-12 excavation - bottom not defined~~
13) ~~H108 - 0-18 removal, bottom not defined~~
~~BL0256 12-18" 22.2 - pvr or char - should take char sample~~

stream movement
X 5 hr - d/s along meander
X 10 hr along meander 315+00, plus u/s

only 0-6

~~RO 001L 0-6~~

~~RO 319+60-S150 (2.2)~~

~~RO 007L 0-6~~

~~RO 324+00 -S60~~ (4.2)

~~RO 328+00 -S100~~ (4.4) ✓

RO 330 +20 - S50 low

RO 330 +30 - N15 low

RO 328 + 70 - N50 low

RO 328 + 70 - N30 low

RO 328 + 70 - N10 (1.1) ✓

RO 327+06 - N30 low ✓

RO - 323 + 40 - N50 (1.2) ✓

RO - 319 + 60 - N30 low ✓

~~RO - 319+60 - N50 low~~

RO - 319+60 - N70 low

RO - 318 + 20 - N80 low

exc. issues

10R/0202 0-12

(RO507, RO503 [illegible], RO502R)

0201/40R (RO301R)

(RO503R)

N/S polygons

~~70R~~ far from others

~~100R~~ ~~could be low~~

~~110R~~ ~~bracketed~~ by low

~~120R~~ ✓

60L ✓

30L ✓

50L ✓

80L ✓

~~RO 330+20 S50~~

[illegible]

90L

~~100L~~

~~110L~~

depression in [illegible]

Polygons Not Sampled – OU-3 Reaches N, O and P

The polygons listed below were not sampled as part of the original sampling plan or any subsequent sampling. We've limited the list to those likely to have PCB deposits exceeding 5 mg/kg. We have not listed polygons located as some distance from the stream. For those polygons identified we have listed the similar polygons identified in the sample results. In a few situations, the polygon is identified as being part of a removal area, but the depth may not have been determined.

Polygon	Similar Polygon Identified in Original Sampling Plan and Results from Sampling Similar Polygon
6NL	4NL 8.4/39/0.22
9NL	1NL 16/0.91, but 9NL is farther away from the stream
13NL	1OR 6.4/2.6; not fully sampled, but included in removal area -- depth sample needed
11NR	Original sample located 80 to 100 feet downstream from location shown in sampling plan. Sample should be about 40 to 50 feet directly east of RN—311+6—E40
3OL	3OR 0.15/? away from stream
4OL	5OR 31/1.9; not sampled, but identified for removal to depth of 12 inches – sample at depth of >12 inches needed
5OL	5OR 31/1.9
8OL	11OL 4/0.23 perpendicular to stream -- sample in northeastern portion of polygon at about W20
10OL	In polygon identified as 10OLa in recent submittal
1PL	1PR 10/4.4/?
11PL	12PR 10/6; sampled at one end at depth of 6 to 12 inches; identified for removal to 12 inches
12PL	11PR 13/0.043
15PL	11PR 13/0.043
8PR	3PR 12/0.083; sampled 11.3; southern part identified for removal – western portion needs to be sampled
4PR	Western portion

Locations where the stream has moved laterally and deposition of PCBs on the inside of the meander is likely and where not previously sampled.

Approximate Location	Comment
310+80-E10	Within polygon 5NR
313+00-E10	Within polygon 8NR
314+90-W10	Within polygon 10NL

322+00-E10	Within 5OR
323+00-W10	Within ~~5OL~~ 2OL
324+70-W10	Within 7OL
325+00-E10	Within ~~5OL~~ 5OR
325+70-W10	Within 7OL
333+40-E10	Within 3PR
11PR/12PR	The tight meander area near 339+70 (also listed under under-sampled locations)

Selected locations that are under-sampled.

Location	Comment
Western portion of 5NR	See lateral deposition sample above
7NL upstream	At about 310+30-W20
7NL downstream	At about 312+50-W10
8NR downstream (two)	See lateral deposition sample at 313+00-E10; upstream of 9NR Also at meander between 204 and 204a in 8NR - ~~clarify~~ remove
10NL upstream (two)	At about 313+50-W30 and at 314+50-W10
11NR (two)	Upstream and downstream samples. Also identified in listing of unsampled polygons.
N110	Upland boundary (also identified by TRC)
5NL	Downstream and upland boundaries between 0-6 and 6-12 boundary – between N103 and N101 - could be deleted - redundant
7OL	See lateral deposition samples above
7OLa	In depression shown on figure
3OR	Downstream at about 320+00-e10
5OR	At about 322+80-E20
11OR	Upstream portion at about 327+30
1PR - the will collect	Upstream and downstream of 2PR
3PR	Upstream portions; upstream end of P202 not identified
9PR	Between 8PR and 12PR
9PR	Near 341+00-N10
2PL	In internally drained area along road embankment
11PR	Downstream portion near 339+70
10PL	Portion downstream of 11PL; included in removal area P104, but depth sampled needed

Selected locations where only the 0 to 6 inch depth was analyzed.

RN-305+90-N90	
RN-305+90-S40	
RN-309+40-N10	
RN-311+00-W100	
RN-311+60-W40	
RN-313-00-E100	
RN-315+50-E10	
RN-315+50-W40	
RO-319+60-N30	
RO-323+40-N50	
RO-327+00-N30	
RO-328+00-S100	
RO-328+70-N10	
RO-319+60-S150	
RO-324+00-S60	
RO-330+20-S50	
RO-330+30-N5	
RO-328+70-N50	
RO-328+70-N30	
RO-319+60-N50	
RO-319+60-N70	
RO-318+20-N80	
RP-332+70-S40	
RP-332+70-N35	
RP-336+70-S60	

Polygons/Sections where characterization does not support excavation depth

Polygon/location	Comment
18ML	9.09 at 12-18" and 22.2 (RN025L) at 12-18"
5NL and 5NL/N103	5.79 (RN012L) at 0-6" and 8.16 (RN013L) at 6-12" – downstream boundary N103 and N101
20R/N206	7.69 (RN512R) at 0-6"
12NL	12.4 (RN015L) at 6-12"
10NL/N107	6.7 (RN014L) at 0-6"
21ML	5.76(RN024L) at 6-12"

1OR/O202	0-12" (RO507, RO505, RO500R)
4OR/O201	(RO501R, RO503R)
P101/2PL	0-6" (RP001L – 6 ppm)
P102/4PL	0-12" (RP002L – 13.3 ppm)
P103/6PL	0-6" (RP004L – 7.28 ppm)
P105/10PL	6-12" (RP006L – 6.05 ppm, duplicate sample analysis is 2.26 ppm)
P202/3PR	0-6" (RP502R – 5.55 ppm, RP506R – 7.46 ppm)

RE: Draft List of Data Gaps -- HARP OU-3 Reaches N, O and P

Baumann, James S - DNR to: Harvey, Christopher (Chicago,IL-US), Jean Greensley 10/24/2011 08:41 AM

Cc: "Wildeman, Anna J (20109)", "Johnson, Deborah D - DNR", "Rasmussen, Russell A - DNR", "Danesh, Paymon (Chicago,IL-US)"

Chris,

You asked for more information on where sampling requirements are identified. Section NR 347.06 is the best place to look in state requirements. Jean would be in a much better position to identify applicable federal requirements. A few specific state administrative rules sections that are pertinent are:

- S. NR 347.06(4)(e) identifies the information obtained visually to characterize the sample site. This information is commonly reported on the soil boring log form.
- S. NR 347.06(6)(a) identifies that each observed layer in the sample needs to be analyzed. Other sections discuss sample depths to at least parent material.

Throughout the project area we have seen greater concentrations at greater depths. This only makes sense since the older deposited sediment was of higher concentration. A number of recent samples show the increased concentration with depth where the top six inches were less than 5 mg/kg including at least three sites in Reach M collected in the last month and at least one more in Reach K. It would be hard to make a technical argument to support a presumption that all of the samples that were analyzed to a depth of 0 to 6 inches do not have PCB concentrations of significance.

Jean and I independently reviewed the information and then compared our notes. We looked at all of the sample locations where only the top six inches was analyzed and identified a subset where we thought that there was sufficient potential to have greater depths analyzed. As I indicated on Friday, we will review the ones you are questioning and get back to you as soon as we can.

Jim Baumann
Special Assistant, Bureau of Watershed Management
Wisconsin Department of Natural Resources
P. O. Box 7921
Madison, WI 53707
608/266-9277
james.baumann@wisconsin.gov

From: Harvey, Christopher (Chicago,IL-US) [mailto:CHarvey@trcsolutions.com]
Sent: Saturday, October 22, 2011 3:25 PM
To: Baumann, James S - DNR; Greensley.Jean@epamail.epa.gov
Cc: Wildeman, Anna J (20109); Johnson, Deborah D - DNR; Rasmussen, Russell A - DNR; Danesh, Paymon (Chicago,IL-US)
Subject: RE: Draft List of Data Gaps -- HARP OU-3 Reaches N, O and P

Jim,

Thank you for looking at these so quickly. I need further clarification regarding your ending comment about a full profile analysis. Where is a full profile analysis defined? Based on

Wisconsin Administrative Code NR347.06, the number and location of sediment samples can be collaboratively specified based on the initial evaluation and the potential for contamination. In addition, in NR347.06(6)(d), "If previous sampling data or other adequate available information demonstrates that the possibility of contamination is negligible, analysis for any chemical may be waived, in writing, by the department."

Based on the data and limited potential for contamination, TRC proposes that the previously referenced locations with only 0-6" sample results are adequately characterized and do not require additional vertical sampling.

Regarding the other two areas we to recheck:

4OL: I think the source of confusion is that the boundaries of 4OL are drawn differently in the SAP versus the Technical Memorandum (it extends further upstream and downstream in the latter). TRC will collect additional samples at the requested location.

1PR: You are correct, existing samples are in 2PR. TRC will collect the requested samples.

If you have any questions, please contact me at 312-578-0870, ext. 8486.

Thank you,

Chris

From: Baumann, James S - DNR [mailto:James.Baumann@Wisconsin.gov]
Sent: Friday, October 21, 2011 11:51 AM
To: Harvey, Christopher (Chicago,IL-US); Greensley.Jean@epamail.epa.gov
Cc: Wildeman, Anna J (20109); Johnson, Deborah D - DNR; Rasmussen, Russell A - DNR; Danesh, Paymon (Chicago,IL-US)
Subject: RE: Draft List of Data Gaps -- HARP OU-3 Reaches N, O and P

Chris,

I'll contact Jean and go through each of your comments. This is why we sent it as a draft.

We will try to respond by the middle of next week. During the interim, there are a few that I can address right away and a few where I ask for you to look at again:

1. 9NL not sampled -- yes, I failed to remove that one from the list. It will be deleted.

2. 11NR -- Please keep in mind that of the six samples you mention, three were not analyzed to a depth of more than 6 inches and RN-311+60-E10 is 13 mg/kg. The sample proposed for this polygon ended up 80 or so feet to the north. I'll discuss with Jean.

3. 4OL -- Please look again. The samples you cite appear to be in 2OL and not in 4OL. 4OL is rather small and abuts the stream.

4. 323+00-W10 -- Yes, you are correct, the location is within 2OL and not 5OL. I'll make the change.

5. 325+00-E10 -- Yes, you are correct, the location is within 5OR and not 5OL. I'll make the change.

6. 1PR -- please look again. It appears the two samples are within 2PR. The step out sample you mention was not analyzed at a depth greater than 6 inches. The original sample for 2PR seems to be at a different elevation than 1PR.

You question a number of locations identified where only the 0 to 6 inch depth was analyzed. Again, I'll discuss each one with Jean. Please keep in mind that state administrative rules require a full profile analysis. For step out samples we may agree that the original sample meets the requirements. However, these are original samples and not step out samples. The sample locations listed are a subset of locations that do not have a full profile. Each was based on some factor, such as proximity to the stream or a sample with a high concentration. For example, for RO-318+20-N80 there is a sample of 44 mg/kg within 30 feet.

Jim Baumann
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P. O. Box 7921
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james.baumann@wisconsin.gov

From: Harvey, Christopher (Chicago,IL-US) [mailto:CHarvey@trcsolutions.com]
Sent: Friday, October 21, 2011 10:09 AM
To: Baumann, James S - DNR; Greensley.Jean@epamail.epa.gov
Cc: Wildeman, Anna J (20109); Johnson, Deborah D - DNR; Rasmussen, Russell A - DNR; Danesh, Paymon (Chicago,IL-US)
Subject: RE: Draft List of Data Gaps -- HARP OU-3 Reaches N, O and P
Jim and Jean,

We have reviewed the draft list of proposed data gaps in HARP OU3 Reaches N, O and P that was provided by you. There are some items on the list that need further clarification which we have listed below. We have also identified items in the list that we believe are already adequately characterized and do not represent data gaps.

We plan to begin sampling in Reaches N, O and P in the near future to address the data gaps and submit the sample results to you by November 20, 2011. We would appreciate your comments by Tuesday, October 25th.

Polygons not sampled

- 9NL: The results cited for the similar polygon (1NL) are actually in 1NR. All of the results in 1NL are less than 5ppm. Polygon 9NL is more similar to 1NL than 1NR, since 9NL and 1NL are both upland of an outer meander, while 1NR is part of an inner meander. TRC proposes that 9NL does not represent a significant concern and does not need to be sampled.
- 11NR: There are six sample locations between the creek and 11NR that are <5 ppm (RN 517R, RN504R, RN 510R, RN-313+00-E100, RN-311+60-E40, RN-311+60-E80), which makes it unlikely that there are significant PCB concentrations in 11NR. TRC proposes that 11NR does not represent a significant concern and does not need to be sampled.
- 4OL: 4OL already has three locations that were sampled at a depth of >12 inches. TRC proposes that 4OL does not require additional sampling.

Locations where the stream moved laterally with likely deposition on an unsampled inner meander

- 323+00-W10: Please clarify. The station ID description places the sample at the inner meander at the downstream end of 2OL (not 5OL as indicated).
- 325+00-E10: Please clarify. The station ID description places the sample at the inner meander at the downstream end of 5OR (not 5OL as indicated).

Under-sampled locations

- 8NR downstream (two): Needs clarification. The two proposed samples seem to be at the same location, described in two different ways.
- 5NL: Need clarification on where it is under-sampled. Do you mean the downstream/upland boundary of N103, at approximately 13 feet west of RN-309+40-S40?
- 1PR: The downstream end of 1PR is not under-sampled. A sample has already been collected 15' feet away from the downstream end (RP 501R 0-6"=1.49 ppm). TRC proposes that an additional sample is not necessary.

Selected locations where only the 0-6" depth was analyzed

- Sampling in Reaches N through P has identified areas where a PCB-impacted layer greater than 5 ppm is covered by a layer with lesser impacts. However, they are typically near the creek (most are within 15 feet) or near irregular terrain such as a tributary, and the 0-6" layer has a result that is close to 5 ppm (not less than 1 ppm).
- Some of the proposed data gap locations have 0-6" layer results that are less than 1 ppm and are located far from the creek in a typical setting, or have some other surrounding context that makes it unreasonable to consider such areas as data gaps. As such, TRC proposes that the following locations are adequately characterized and do not require additional vertical sampling:
    - RN-305+90-S40 (located over 40 feet away from the creek on an outer meander; and is upland of a nearby sample location RN-305+90-S10 6-12" = 0.89 ppm).
    - RN-311+00-W100 (located over 50 feet away from the creek; and there are no surrounding impacts)

- RN-311+60-W40 (has a 0-6" result of 0.28 ppm; and is upland of a nearby sample location RN 005L 6-12" = 2.0 ppm)
- RO-319+60-N30 (has a 0-6" result of 0.15 ppm; and is over one foot higher in elevation than a nearby sample RO-319+60-N10 6-12" = 2.6 ppm.)
- RO-327+00-N30 (has a 0-6" result of 0.12 ppm, the overbank is relatively steep at that location, and there are no surrounding impacts).
- RO-319+60-S150 (located over 70 feet away from the creek on an outer meander)
- RO-324+00-S60 (located upland of a nearby sample location RO-324+00-S40 6-12" = 0.083 ppm).
- RO-330+20-S50 (has a 0-6" result of 0.074 ppm; is over 50 feet away from the creek, and is upland of a nearby sample RO-330+20-S15 6-12" = 1.7 ppm).
- RO-328+70-N50 (has a 0-6" result of 0.092 ppm, and the overbank is relatively steep at that location)
- RO-319+60-N50 (has a 0-6" result of 0.044 ppm, and is approximately two feet higher in elevation than nearby sample location RO-319+60-N10 6-12" = 2.6 ppm).
- RO-319+60-N70 (has a 0-6" result of <0.033 ppm, and is approximately two feet higher in elevation than nearby sample location RO-319+60-N10 6-12" = 2.6 ppm).
- RO-318+20-N80 (has a 0-6" result of 0.047 ppm).
- RP-336+70-S60 (located upland of a nearby sample location RP-336+70-S40 6-12" = 1.2 ppm).

Locations where characterization does not support excavation depth

- P101/2PL: The excavation depth of P101 was established by RP-332+70-S10 6-12" = 1.2 ppm, located in the center of the removal zone, in 2PL. TRC proposes that an additional sample is not necessary.
- P202/3PR: The excavation depth of P202 was established by RP-335+00-N20 6-12" = 0.083 ppm, located in 3PR near the bank, and less than 40 feet away from the cited 0-6" samples. TRC proposes that additional sampling is not necessary.

If you have any questions, please contact me at 312-578-0870, ext. 8486.

Chris

From: Baumann, James S - DNR [mailto:James.Baumann@Wisconsin.gov]
Sent: Tuesday, October 18, 2011 1:48 PM
To: Harvey, Christopher (Chicago,IL-US)
Cc: Wildeman, Anna J (20109); Greensley.Jean@epamail.epa.gov; Johnson, Deborah D - DNR; Rasmussen, Russell A - DNR
Subject: Draft List of Data Gaps -- HARP OU-3 Reaches N, O and P

Chris,

In accordance with the proposed schedule, attached is a draft list of data gaps for HARP OU-3 Reaches N, O and P. After carefully reviewing the information you provided last week, Jean and I grouped the data gaps by category so that the reason for the gap listing is easier to understand. We did not include polygons not sampled that are some distance from the stream.

If you have questions, I'm sure that we can discuss them Thursday during the conference call you've scheduled.

Jim Baumann
Special Assistant, Bureau of Watershed Management
Wisconsin Department of Natural Resources
P. O. Box 7921
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Chris

From: Baumann, James S - DNR [mailto:James.Baumann@Wisconsin.gov]
Sent: Tuesday, October 18, 2011 1:48 PM
To: Harvey, Christopher (Chicago,IL-US)
Cc: Wildeman, Anna J (20109); Greensley.Jean@epamail.epa.gov; Johnson, Deborah D - DNR;

Rasmussen, Russell A - DNR
Subject: Draft List of Data Gaps -- HARP OU-3 Reaches N, O and P

Chris,

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If you have questions, I'm sure that we can discuss them Thursday during the conference call you've scheduled.

Jim Baumann
Special Assistant, Bureau of Watershed Management
Wisconsin Department of Natural Resources
P. O. Box 7921
Madison, WI 53707
608/266-9277
james.baumann@wisconsin.gov

LEGEND

PCBs mg/kg

- – >= 500
- – 50–500
- – 25–50
- – 5–25
- – 0.5–5
- – <= 0.5

* – INDICATES EIA DATA >= 10 AND < 50 mg/kg

** – INDICATES EIA DATA < 10 mg/kg

– PROPOSED SAMPLING LOCATIONS

– 2003 SOIL DESCRIPTION LOCATION

LEGEND

1951

1973

1986

1992

START REACH P

END REACH O

RO–330+20–IC–RS

330+00

RO–329+00–S10

RO–328+20–IC–RS

RO–327+00–N50

RO–328+00–S100

WDNR-003-93

RO–326+80–W20

RO–324+00–E5

325+00

RO–323+50–N10

FVD-RI-SD30**

RO–320+80–IC–RS

320+00

START REACH O

END REACH N

RN–317+00

RN–317+00

IN–CHANNEL SUBSTRATE COMPOSITION

WHOLE CHANNEL DEPOSITS OF MUD AND SILT.

N

0′ 50′ 100′ 200′

SCALE

EARTH TECH

A tyco INTERNATIONAL LTD. COMPANY

4135 Technology Parkway, Sheboygan, WI 53083 (920) 458–8711

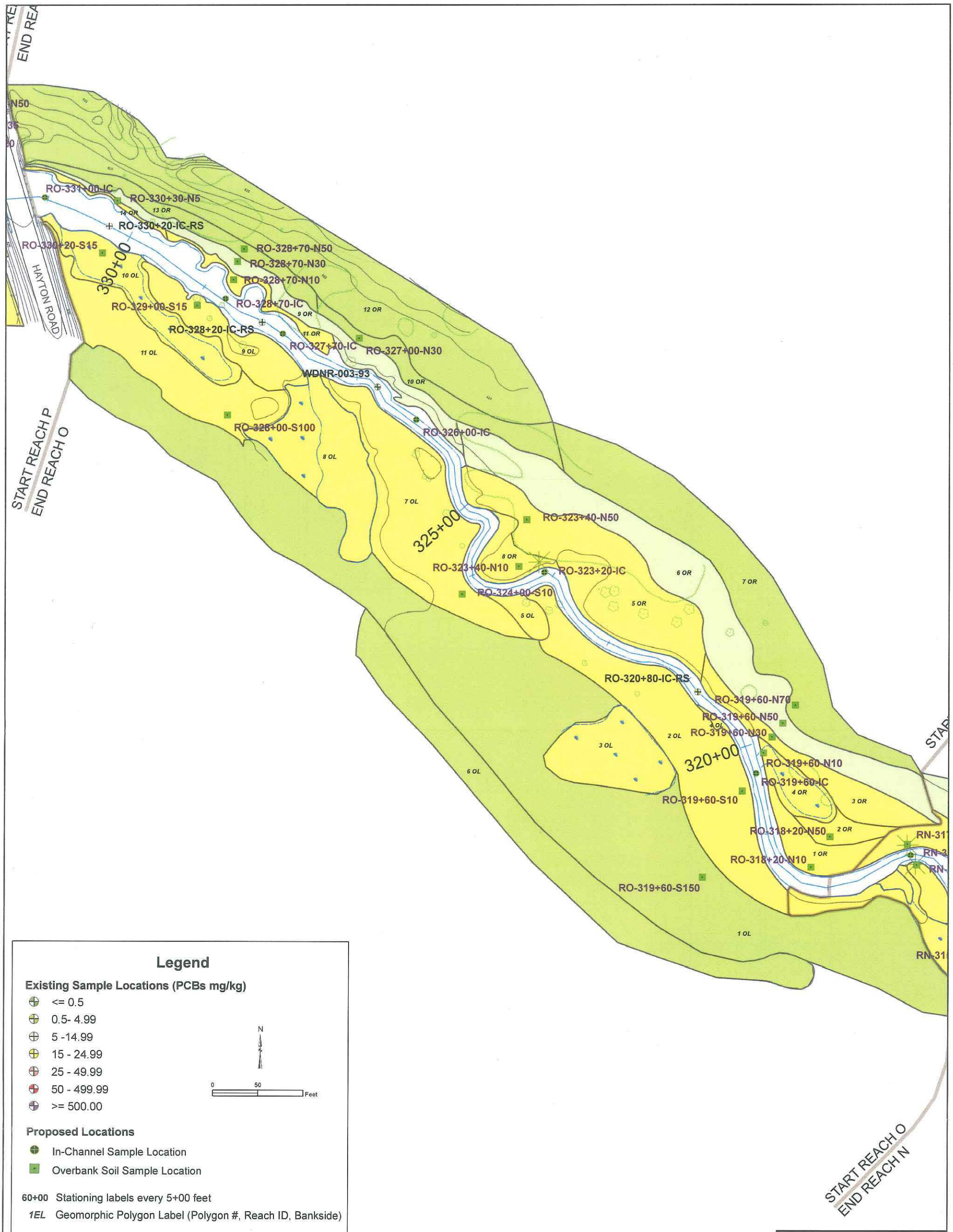
DRAWN BY: JRD	DATE:NOVEMBER 26, 2003
CHECKED BY: JDW	EDITED BY: JDW
FILE NAME: OU3 112603 JW.dwg	

FIGURE 8

OU3
REACH O

TECUMSEH PRODUCTS COMPANY
NEW HOLSTEIN, WISCONSIN

PROJECT NUMBER 44420.02



Legend

Existing Sample Locations (PCBs mg/kg)

- <= 0.5
- 0.5- 4.99
- 5 -14.99
- 15 - 24.99
- 25 - 49.99
- 50 - 499.99
- >= 500.00

N

0 50 Feet

Proposed Locations

- In-Channel Sample Location
- Overbank Soil Sample Location

60+00 Stationing labels every 5+00 feet

1EL Geomorphic Polygon Label (Polygon #, Reach ID, Bankside)

Geomorphic Polygons (Estimated PCBs mg/kg)

- <= 0.5
- 0.5- 4.99
- 5 -14.99
- 15 - 24.99
- 25 - 49.99
- 50 - 499.99
- >= 500.00

EARTH TECH
4135 Technology Parkway, Sheboygan, WI 53083 (920) 458-8711

DRAWN BY: SMF	DATE: May 4, 2005
CHECKED BY: JT/SRK	EDITED BY: SMF
FILE NAME: Reach O	

FIGURE 15
PRE-INVESTIGATION SWAC
OU3
REACH O

TECUMSEH PRODUCTS COMPANY
NEW HOLSTEIN, WISCONSIN

PROJECT NUMBER 44420

TRC

230 West Monroe Street
Suite 2370
Chicago, IL 60606

312.578.0870 PHONE
312.578.0877 FAX

www.TRCsolutions.com

July 20, 2011

Mr. Jim Baumann
Special Assistant to Bureau Director
Bureau of Watershed Management
Wisconsin Department of Natural Resources
101 S. Webster Street, Box 7921
Madison, WI 53707-7921

Ms. Jean Greensley
U.S. Environmental Protection Agency
Remediation and Reuse Branch
Land and Chemicals Division
77 W. Jackson Boulevard
Chicago, IL 60604-3511

Re: Proposed Overbank Removal Boundaries and PRV Sample Locations
Operable Unit 3, Reach L
Hayton Area Remediation Project

Dear Mr. Baumann and Ms. Greensley:

Enclosed for your approval are figures and tables showing revised overbank removal boundaries in Reach L of the Hayton Area Remediation Project, Operable Unit 3 (OU3). Electronic copies of this submittal are also being provided via email to James.Baumann@Wisconsin.gov and Greensley.Jean@epamail.epa.gov.

Figure 1 shows sample results and revised removal boundaries of Reach L. Table 1 lists the characterization samples that were collected and analyzed in 2011. Table 2 provides the rationale for the boundaries of each removal zone of Reach L.

Also enclosed for your approval is a list of proposed post-removal verification (PRV) samples in Reach L. The PRV samples are listed on Table 3, and their locations are shown on Figure 2.

The stream bank PRV locations were selected using the following guidelines:

- Correspond to geomorphic features, such as an individual inside meander or outside meander;
- Along straight sections of the stream, PRV samples are placed on each side of the stream at a frequency of at least one per 200 feet;
- PRV samples are not required at locations where the adjacent overbank removal depth is 18" or greater because the stream bank has been removed at a depth of at least 18"; and

- PRV samples are not required where characterization of the bank is adequate to justify no removal.

Table 4 indicates the segment of stream bank (by Station ID) that is represented by each stream bank PRV sample. Table 4 also specifies the removal zones located adjacent to the stream with overbank removal depths of 18 inches or greater.

For your reference, I have also enclosed a copy of the Reach L historic sample results presented in the 2006 *Lower OU2 & OU3 Technical Memorandum.*

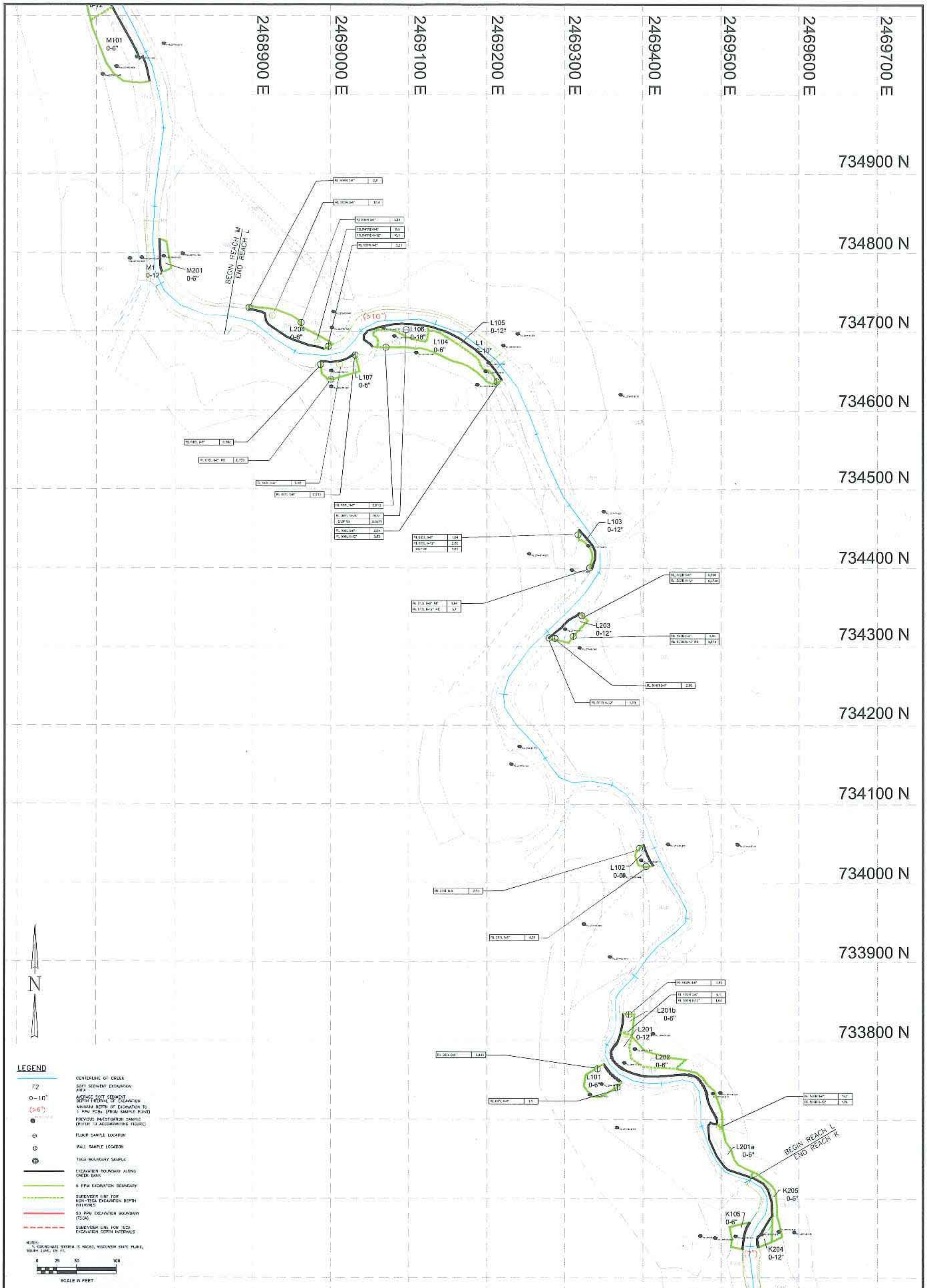
We would appreciate your comments and approval for Reach L by August 5, 2011.

Please contact me at (312) 578-0870, extension 8486, with any questions.

Sincerely,
TRC

Christopher D. Harvey, PE
Program Manager

Enclosures: *Figure 1 - Sample Results and Excavation Boundaries, Reach L*
Figure 2 - Proposed Post-Removal Verification Sampes, Reach L
Table 1- Characterization Sampling Results 2011, Reach L
Table 2 - Rationale for Removal Boundaries, Reach L
Table 3 - Proposed Post-Removal Verification Samples, Reach L
Table 4 – Proposed Stream Bank PRV Samples, Reach L
Figure - Reach L (from Lower OU2 & OU3 Technical Memorandum, 2006)



SAMPLE RESULTS AND EXCAVATION BOUNDARIES
REACH L

HAYTON AREA REMEDIATION PROJECT

DRAWN BY: SPA	DATE: 07/11/2011
PROJECT NO: 107927	DWG FILE: Reach KLM Presentation (7-18-2011)
TRC 230 WEST MONROE STREET SUITE 2370 CHICAGO, IL 60606 312-578-0870	FIGURE 1

S:\Cad Files\Year 2010 Drawings\107927 - TECUMSEH\2011 Sampling and excavation boundary maps\Presentation Figures\Reach KLM Presentation (7-18-2011).dwg

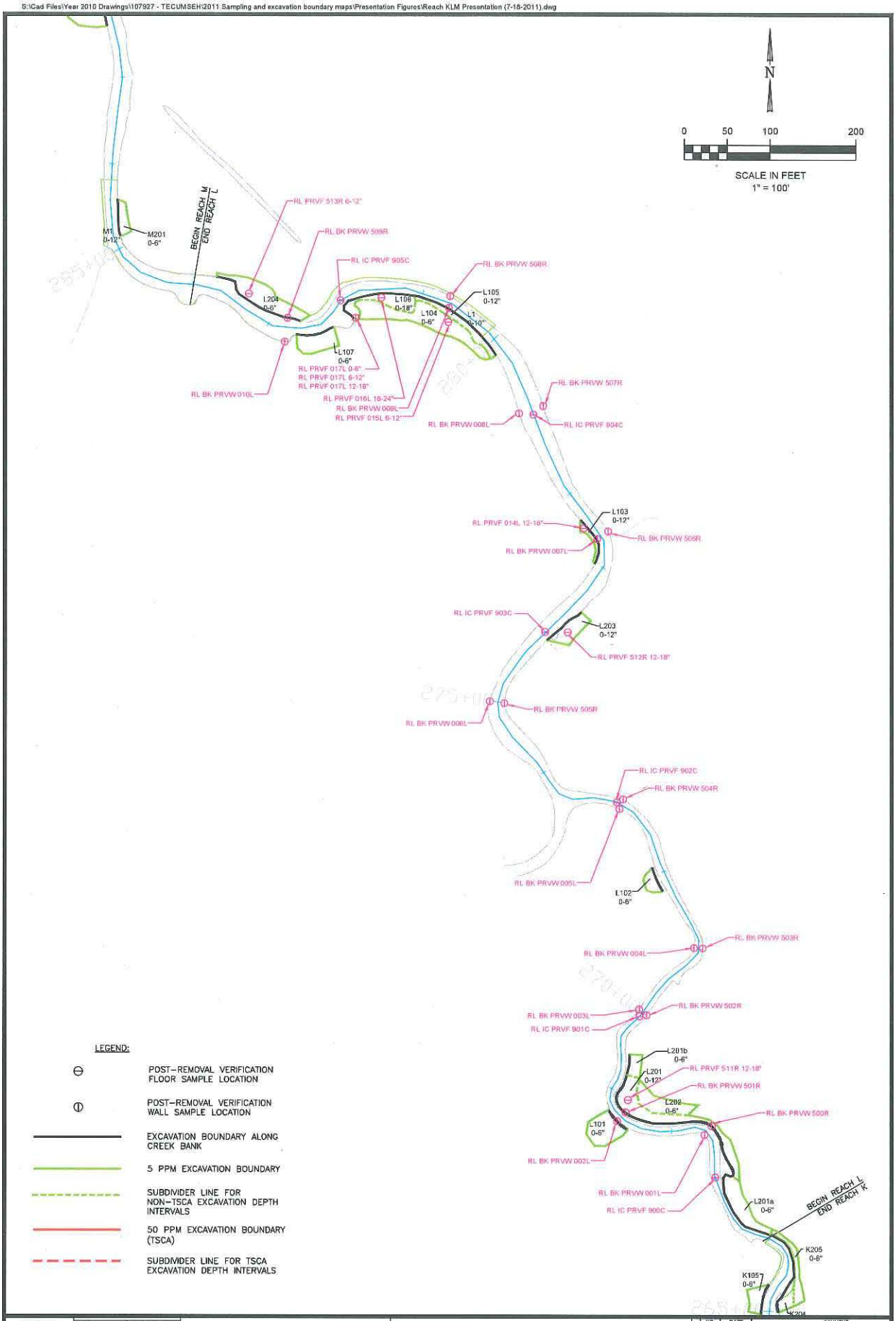


FIGURE NO.	DATE: JULY 18, 2011	SCALE: 1" = 100'
2	DESIGN BY: PD	DRAWN BY: SPA
	SHEET NO. 2 of 2	JOB NUMBER: 107927
	SHEET ID: REACH KLM PRESENTATION (7-18-2011).DWG	

PROPOSED POST-REMOVAL VERIFICATION SAMPLES
REACH L

HAYTON AREA REMEDIATION PROJECT
CALUMET COUNTY, WISCONSIN

TRC
230 WEST MONROE STREET,
SUITE 2370
CHICAGO, IL 60606
PHONE (312) 578-0870
FAX (312) 578-0877

REVISIONS	NO.	DATE	COMMENT

Table 1. Characterization Sampling Results 2011
Reach L
Hayton Area Remediation Project

07/20/2011

Sample Name	Total PCBs (mg/kg)
RL 001L 0-6"	1.5
RL 002L 0-6"	0.446
RL 003L 0-6"	4.03
RL 004L 0-6"	2.53
RL 005L 0-6"	1.64
RL 005L 6-12"	2.66
DUP 86	1.65
RL 006L 0-6"	2.04
RL 006L 6-12"	3.53
RL 007L 18-24"	0.09
DUP 93	0.0871
RL 008L 0-6"	0.613
RL 009L 0-6"	5.05
RL 010L 0-6"	0.662
RL 011L 0-6	0.933
RL 012L RE 0-6	0.729
RL 013L RE 0-6	1.96
RL 013L RE 6-12	3.7
RL 500R 0-6"	5.1
RL 500R 6-12"	1.64
RL 501R 0-6"	2.99
RL 501R 6-12"	1.09
RL 502R 0-6"	0.196
RL 502R 6-12"	0.0736
RL 503R 0-6"	10.4
RL 504R 0-6"	3.83
RL 505R 0-6"	2.8
RL 506R 0-6"	3.43
RL 507R 0-6	0.366
RL 507R RE 6-12	0.17

Sample Name	Total PCBs (mg/kg)
RL 508R 0-6	15.2
RL 508R 6-12	1.78
RL 509R 0-6	3.21
RL 510R 0-6	6.74

Table 2. Rationale for Removal Boundaries
Reach L
Hayton Area Remediation Project

07/20/2011

Removal Zone ID	Rationale
L101	• Upstream boundary is established by sample RL 001L 0-6" = 1.5 mg/kg. • Upland boundary is established by sample RL-268+70-W30 0-6" = 1.2 mg/kg. • Downstream boundary is established by sample RL 002L 0-6" = 0.446 mg/kg. • Floor is established by sample RL-268+70-W10 6-12" = 0.071 mg/kg.
L102	• Upstream boundary is established by sample RL 003L 0-6" = 4.03 mg/kg. • Upland boundary is established by the polygon line between 3LLc and 3LLa, with reference to sample RL-270+00-W10 0-6" = 3.6 mg/kg. • Downstream boundary is established by sample RL 004L 0-6" = 2.53 mg/kg. • Floor is established by sample RL-272+00-W10 6-12" = 0.72 mg/kg.
L103	• Upstream boundary is established by samples RL 013L 0-6" RE = 1.96 mg/kg; and RL 013L 6-12" RE = 3.7 mg/kg. • Upland boundary is established by the polygon line between 7LL and 8LL, with reference to sample RL-277+70-W40 0-6" = 3.2 mg/kg. • Downstream boundary is established by samples RL 005L 0-6" = 1.64 mg/kg; and RL 005L 6-12" = 2.66 mg/kg. • Floor is established by sample RL-277+70-W10 12-24" = 3.1 mg/kg.
L104	• Upstream boundary is established by sample RL 006L 0-6" = 2.04 mg/kg. • Upland boundary is established by sample RL 008L 0-6" = 0.613 mg/kg; and the polygon line between 10LL and 11LL, with reference to samples RL-280+10-W30 0-6" = 2.8 mg/kg; and RL-281+80-S40 0-6" = 1.9 mg/kg. • Downstream boundary is established by sample RL 008L 0-6" = 0.613 mg/kg. • Boundary with L105 is established by the polygon line between 9LL and 10LL, with reference to sample RL-280+10-W15 6-12" = 1.2 mg/kg. • Boundary with L106 is established by the polygon line between 13LL and 12LL, with reference to sample RL-281+80-S15 6-12" = 1.4 mg/kg. • Floor is established by samples RL-280+10-W15 6-12" = 1.2 mg/kg; and RL-281+80-S15 6-12" = 1.4 mg/kg.
L105	• Upstream boundary is established by sample RL 006L 0-6" = 2.04 mg/kg; and RL 006L 6-12" = 3.53 mg/kg. • Upland boundary is established by the polygon line between 9LL and 10LL, with reference to sample RL-280+10-W15 6-12" = 1.2 mg/kg. • Downstream boundary is established by the polygon line between 9LL and 12LL, with reference to sample RL-280+10-W5 12-18" = 1.9 mg/kg. • Floor is established by the sample RL-280+10-W5 12-18" = 1.9 mg/kg.
L106	• Upstream boundary is established by the polygon line between 9LL and 12LL, with reference to sample RL-280+10-W5 12-18" = 1.9 mg/kg; and by the polygon line between 10LL and 12LL, with reference to sample RL-280+10-W15 6-12" = 1.2 mg/kg. • Upland boundary is established by the polygon line between 13LL and 12LL, with reference to sample RL-281+80-S15 6-12" = 1.4 mg/kg. • Downstream boundary is established by sample RL 008L 0-6" = 0.613 mg/kg. • Floor is established by sample RL 007L 18-24" = 0.09 mg/kg.
L107	• Upstream boundary is established by sample RL 011L 0-6" = 0.933 mg/kg. • Upland boundary is established by sample RL 012L 0-6" RE = 0.729 mg/kg. • Downstream boundary is established by sample RL 010L 0-6" = 0.662 mg/kg. • Floor is established by sample RL-282+50-S10 6-12" = 0.12 mg/kg.

Table 2. Rationale for Removal Boundaries
Reach L
Hayton Area Remediation Project

07/20/2011

Removal Zone ID	Rationale
L201a	• Upstream removal continues as removal zone K205 0-6". • Upland boundary is established by the polygon line between 12KR and 10KR, with reference to sample RK-265+00-E50 0-6" = 1.0 mg/kg. • Downstream boundary is established by sample RL 508R 6-12" = 1.78 mg/kg. • Floor is established by sample RL 508R 6-12" = 1.78 mg/kg.
L201	• Upstream boundary is established by sample RL 508R 6-12" = 1.78 mg/kg. • Upland boundary is established by the polygon line between 1LR and 2LRa, with reference to samples RL-267+40-E30 0-6" = 0.069 mg/kg and RL-268+70-E60 0-6" = 1.5 mg/kg; the polygon line between 1LR and 2LRb, with reference to RL-268+70-E30 6-12" = 0.67 mg/kg. • Downstream boundary is established by sample RL 500R 6-12" = 1.64 mg/kg. • Floor is established by samples RL-267+40-E10 12-18" = 0.28 mg/kg; and RL-268+70-E10 12-27" = 1.8 mg/kg.
L201b	• Upstream boundary established by sample RL 500R 6-12" = 1.64 mg/kg. • Upland boundary is established by the polygon line between 1LR and 2LRa, with reference to sample RL-268+70-E60 0-6" = 1.5 mg/kg. • Downstream boundary is established by sample RL 504R 0-6" = 3.83 mg/kg. • Floor is established by sample RL 500R 6-12" = 1.64 mg/kg.
L202	• Upstream boundary is established by the polygon line between 2LRa and 2LRb, with reference to sample RL-267+40-E30 0-6" = 0.069 mg/kg. • Upland and downstream boundaries are established by the polygon line between 2LRa and 2LRb, with reference to sample RL-268+70-E60 0-6" = 1.5 mg/kg. • Boundary with L201 is established by the polygon line between 1LR and 2LRb, with reference to sample RL-268+70-E30 6-12" = 0.67 mg/kg. • Floor is established by sample RL-268+70-E30 6-12" = 0.67 mg/kg.
L203	• Upstream boundary is established by samples RL 501R 0-6" = 2.99 mg/kg; and RL 501R 6-12" = 1.09 mg/kg. • Upland boundary is established by samples RL 507R 0-6" = 3.66 mg/kg; and RL 507R 6-12" RE = 0.170 mg/kg. • Downstream boundary is established by samples RL 502 0-6" = 0.196 mg/kg; and RL 502R 6-12" = 0.0736 mg/kg. • Floor is established by sample RL-275+80-E10 12-30" = <0.036 mg/kg.
L204	• Upstream boundary is established by RL 509R 0-6" = 3.21 mg/kg. • Upland boundary is established by sample RL 506R 0-6" = 3.43 mg/kg. • Downstream boundary is established by sample RL 505R 0-6" = 2.8 mg/kg. • Floor is established by sample 13LR-PRE-6-12" = <0.1 mg/kg.

Table 3. Proposed Post-Removal Verification Samples
Reach L
Hayton Area Remediation Project

07/20/2011

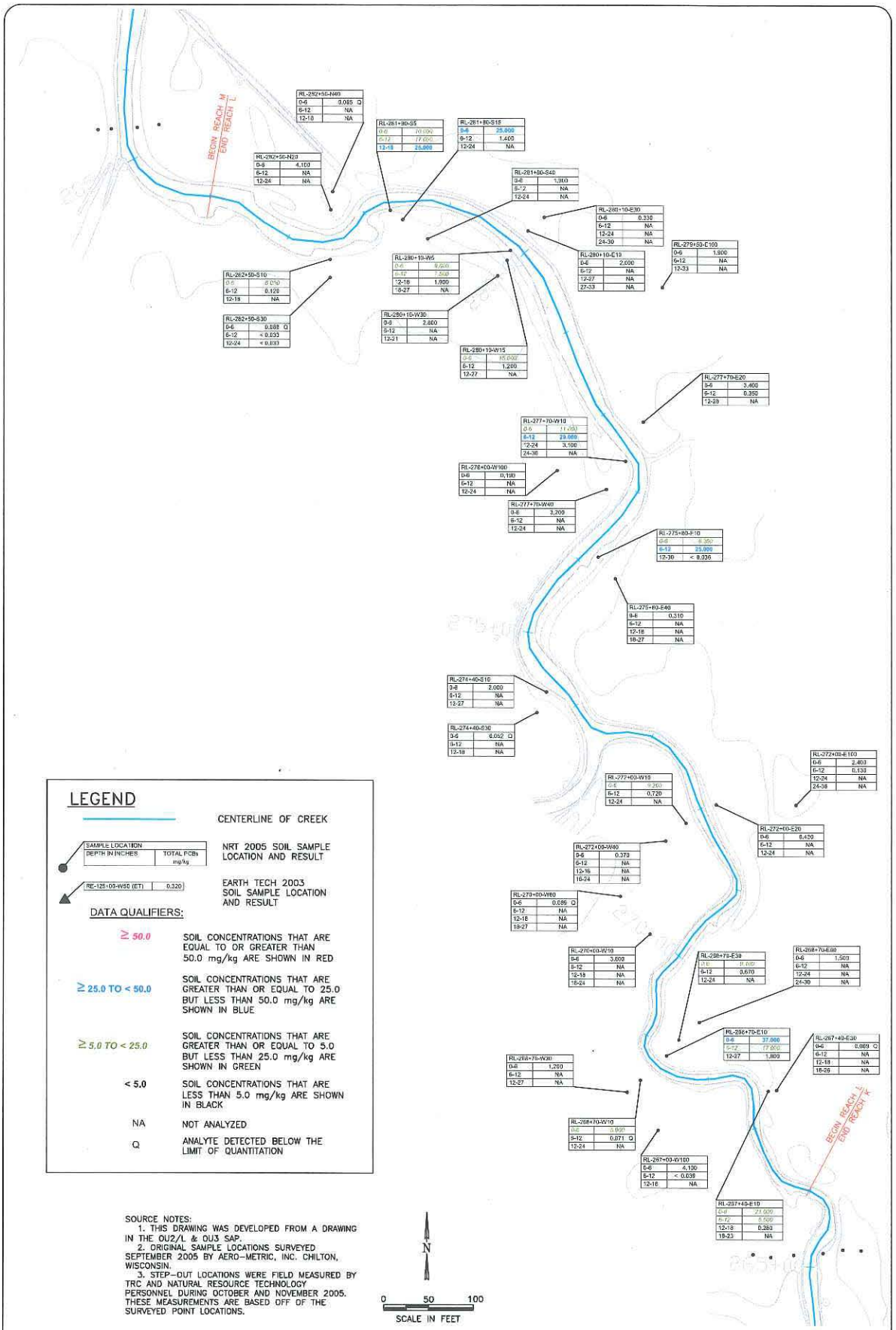
Sample ID	In-channel[1] or Overbank	Type	Northing	Easting
RL IC PRVF 900C	In-channel	Floor	733693	2469474
RL IC PRVF 901C	In-channel	Floor	733878	2469386
RL IC PRVF 902C	In-channel	Floor	734124	2469360
RL IC PRVF 903C	In-channel	Floor	734320	2469277
RL IC PRVF 904C	In-channel	Floor	734570	2469263
RL IC PRVF 905C	In-channel	Floor	734701	2469038
RL BK PRVW 001L	Stream bank	Sidewall	733741	2469462
RL BK PRVW 002L	Stream bank	Sidewall	733757	2469360
RL BK PRVW 003L	Stream bank	Sidewall	733886	2469385
RL BK PRVW 004L	Stream bank	Sidewall	733956	2469449
RL BK PRVW 005L	Stream bank	Sidewall	734116	2469363
RL BK PRVW 006L	Stream bank	Sidewall	734240	2469212
RL BK PRVW 007L	Stream bank	Sidewall	734427	2469337
RL BK PRVW 008L	Stream bank	Sidewall	734571	2469247
RL BK PRVW 009L	Stream bank	Sidewall	734693	2469165
RL BK PRVW 010L	Stream bank	Sidewall	734654	2468974
RL BK PRVW 500R	Stream bank	Sidewall	733752	2469470
RL BK PRVW 501R	Stream bank	Sidewall	733767	2469370
RL BK PRVW 502R	Stream bank	Sidewall	733879	2469394
RL BK PRVW 503R	Stream bank	Sidewall	733956	2469459
RL BK PRVW 504R	Stream bank	Sidewall	734127	2469367
RL BK PRVW 505R	Stream bank	Sidewall	734238	2469229
RL BK PRVW 506R	Stream bank	Sidewall	734436	2469349
RL BK PRVW 507R	Stream bank	Sidewall	734580	2469274
RL BK PRVW 508R	Stream bank	Sidewall	734706	2469166
RL BK PRVW 509R	Stream bank	Sidewall	734681	2468977
RL PRVF 511R 12-18"	Overbank	Floor	733781	2469372
RL PRVF 512R 12-18"	Overbank	Floor	734320	2469303
RL PRVF 014L 12-18"	Overbank	Floor	734439	2469321
RL PRVF 015L 6-12"	Overbank	Floor	734677	2469164
RL PRVF 016L 18-24"	Overbank	Floor	734704	2469086
RL PRVF 017L 0-6"	Overbank	Sidewall	734680	2469057
RL PRVF 017L 6-12"	Overbank	Sidewall	734680	2469057
RL PRVF 017L 12-18"	Overbank	Sidewall	734680	2469057
RL PRVF 513R 6-12"	Overbank	Floor	734709	2468931

[1] The locations of in-channel samples may be adjusted, or additional in-channel samples may be added, based on visual cues observed during removal.

Table 4. Proposed Stream Bank PRV Samples - Reach L
Hayton Area Remediation Project

07/20/2011

PRV Sample Name or Removal Zone	Length of Streambank Represented		Description
	Upstream Station	Downstream Station	
Right Bank			
RL BK PRVW 500R	266+00	268+00	Outer meander along L201a and L201
RL BK PRVW 501R	268+00	269+45	Inner meander along L201 and L201b
RL BK PRVW 502R	269+45	270+50	Straight section downstream of L201b
RL BK PRVW 503R	270+50	272+00	Outer meander
RL BK PRVW 504R	272+00	273+75	Outer meander
RL BK PRVW 505R	273+75	276+00	Inner meander
RL BK PRVW 506R	276+00	278+00	Outer meander opposite of L103
RL BK PRVW 507R	278+00	279+80	Straight section
RL BK PRVW 508R	279+80	282+00	Outer meander opposite of L105 and L106
RL BK PRVW 509R	282+00	284+00	Inner meander along L204
Left Bank			
RL BK PRVW 001L	266+00	268+00	Inner meander opposite of L201a and L201
RL BK PRVW 002L	268+00	269+65	Outer meander along L101
RL BK PRVW 003L	269+65	270+50	Straight section
RL BK PRVW 004L	270+50	272+00	Inner meander
RL BK PRVW 005L	272+00	273+75	Inner meander
RL BK PRVW 006L	273+75	276+00	Outer meander
RL BK PRVW 007L	276+00	278+00	Inner meander along L103
RL BK PRVW 008L	278+00	279+80	Straight section upstream of L105
RL BK PRVW 009L	279+80	281+10	Inner meander along L105
L106	281+10	282+10	18" removal
RL BK PRVW 010L	282+10	284+00	Outer meander along L107



SOURCE NOTES:
1. THIS DRAWING WAS DEVELOPED FROM A DRAWING IN THE OU2/L & OU3 SAP.
2. ORIGINAL SAMPLE LOCATIONS SURVEYED SEPTEMBER 2005 BY AERO-METRIC, INC. CHILTON, WISCONSIN.
3. STEP-OUT LOCATIONS WERE FIELD MEASURED BY TRC AND NATURAL RESOURCE TECHNOLOGY PERSONNEL DURING OCTOBER AND NOVEMBER 2005. THESE MEASUREMENTS ARE BASED OFF OF THE SURVEYED POINT LOCATIONS.

FIGURE NO. 31

PROJECT NO. 1778/1.6

NATURAL RESOURCE TECHNOLOGY

REACH L

HAYTON AREA REMEDIATION PROJECT
OVERBANK SAMPLE LOCATIONS AND TOTAL PCB CONCENTRATIONS

DRAWN BY:	RLH/TAS	DATE:	01/18/06
CHECKED BY:	EPK	DATE:	02/07/06
APPROVED BY:	EPK	DATE:	02/15/06

DRAWING NO: 1778-16-B03C, LAYOUT L
REF: P:\1778\CAD1778\060111SOILcad_final

Proposed Overbank Removal Boundaries and Sample Results Operable Unit 3 Reaches N, O and P

Hayton Area Remediation Project

November 2011

Prepared by:

TRC

Chicago, Illinois

230 West Monroe Street
Suite 2370
Chicago, IL 60606

312.578.0870 PHONE
312.578.0877 FAX

www.TRCsolutions.com

rec'd 11/21/11 Cas #1

November 18, 2011

Mr. Jim Baumann
Special Assistant to Bureau Director
Bureau of Watershed Management
Wisconsin Department of Natural Resources
101 S. Webster Street, Box 7921
Madison, WI 53707-7921

Ms. Jean Greensley
U.S. Environmental Protection Agency
Remediation and Reuse Branch
Land and Chemicals Division
77 W. Jackson Boulevard
Chicago, IL 60604-3511

Re: Characterization Sample Results
Operable Unit 3, Reaches N, O and P
Hayton Area Remediation Project

Dear Mr. Baumann and Ms. Greensley:

On October 18, 2011, WDNR and EPA provided TRC with a draft list of data gaps in HARP Operable Unit 3 Reaches N, O and P. TRC reviewed the list with WDNR and EPA and an updated draft list of data gaps was provided to TRC on October 27, 2011. WDNR proposed that TRC should submit sample data results for any samples identified in the draft list of data gaps by November 20, 2011,

Enclosed for your review are figures and tables that include all recent sample results in Reaches N, O and P. Recent results are shown in magenta on Figures 1 through 3. Electronic copies of this submittal are also being provided via email to James.Baumann@Wisconsin.gov and Greensley.Jean@epamail.epa.gov.

At this time, TRC is unable to provide results for each identified sample location, due to delays caused by site conditions. TRC has collected almost all of the identified samples, and expects to receive additional results shortly.

Based on the enclosed sample results, TRC has created new removal zones in Reaches N, O and P. The preliminary removal boundaries are shown in magenta on Figures 1 through 3. TRC plans to collect additional samples to further characterize areas with results greater than 5 ppm total PCBs.

Please contact me at (312) 578-0870, extension 8486, with any questions.

Sincerely,
TRC

Christopher D. Harvey, PE
Program Manager

Enclosures:
Figure 1 - Sample Results and Excavation Boundaries, Reach N
Figure 2 - Sample Results and Excavation Boundaries, Reach O
Figure 3 - Sample Results and Excavation Boundaries, Reach P
Table 1 - Reach N Characterization Sample Results
Table 2 - Reach O Characterization Sample Results
Table 3 - Reach P Characterization Sample Results

Table 1. Additional Characterization Sampling Results
Reach N
Hayton Area Remediation Project

11/18/2011

Sample Name	Total PCBs (mg/kg)	Data Gap[1] and Location	Comments
RN 012L 6-12	0.237	[5] 5NL/N103	Organic silt.
RN 013L 12-18	0.277	[5] 5NL/N103	Organic silt.
RN 014L 6-12	0.296	[5] 10NL/N107	Organic silt.
RN 015L 12-18	0.052 (J)	[5] 12NL	Organic silt.
RN 024L 12-18	<0.0382	[5] 21ML	Organic silt.
RN 023L 12-18	1.04	[5] 18ML	Organic silt.
RN 025L 18-24	0.851	[5] 18ML	Organic silt.
RN 026L 0-6	3.87	[3] N110	Organic silt.
DUP 137	3.55	[3] N110	Organic silt.
RN 027L 6-12	5.51	[3] N110	Organic silt.
RN 028L 0-6	5.31	[1] 6NL	Organic silt.
RN 028L 6-12	1.08	[1] 6NL	Organic silt.
RN 029L 0-6	2.24	[1] 13NL	Organic silt.
RN 029L 6-12	3.34	[1] 13NL	Organic silt.
RN 029L 12-18	CLAY	[1] 13NL	Clay. No sample collected.
RN 030L 0-6	4.49	[2] 314+90-W10 (10NL)	Organic silt.
RN 030L 6-12	8.23	[2] 314+90-W10 (10NL)	Organic silt.
RN 031L 0-6	1.55	[3] 7NL upstream	Organic silt.
RN 031L 6-12	0.317	[3] 7NL upstream	Organic silt.
RN 032L 0-6	3.1	[3] 7NL downstream	Organic silt.
RN 032L 6-12	0.393	[3] 7NL downstream	Organic silt.
RN 033L 0-6	2.31	[3] 10NL upstream	Organic silt.
RN 033L 6-12	2.41	[3] 10NL upstream	Organic silt.
RN 034L 0-6	1.16	[3] 10NL upstream	Organic silt.
RN 034L 6-12	5.54	[3] 10NL upstream	Organic silt.
RN 035L 6-12	4.4	[4] RN-305+90-S40 (1NL)	Organic silt.
RN 036L 6-12	2.5	[4] RN-311+60-W40 (8NL)	Organic silt.
RN 037L 6-12	3.3	[4] RN-315+50-W40 (N107)	Organic silt.
RN 512R 6-12	1.04	[5] 20R/N206	Organic silt.
DUP 140	1.24	[5] 20R/N206	Organic silt.
RN 521R 0-6	<0.0317	[1], [3] 11NR	Organic silt.
RN 521R 6-12	<0.0325	[1], [3] 11NR	Organic silt.
RN 522R 0-6	2.85	[2] 310+80-E10 (5NR)	Organic silt.
RN 522R 6-12	6.52	[2] 310+80-E10 (5NR)	Organic silt.
RN 523R 0-6	4.56	[2], [3] 313+00-E10 (8NR)	Organic silt.
RN 523R 6-12	7.17	[2], [3] 313+00-E10 (8NR)	Organic silt.
RN 525R 6-12	0.0829 (J)	[4] RN-305+90-N90 (2NR)	Organic silt.
DUP 138	0.0986 (J)	[4] RN-305+90-N90 (2NR)	Organic silt.
RN 526R 6-12	0.364	[4] RN-309+40-N10 (5NR)	Organic silt.
RN 527R 6-12	0.4	[4] RN-313+00-E100 (10NR)	Organic silt.
RN 528R 6-12	1.38	[4] RN-315+50-E10 (N205)	Organic silt.

(J) = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

[1] Data Gap Types:

[1] Polygons not sampled

[2] Locations where the stream has moved laterally and deposition of PCBs on the inside of the meander is likely and where not previously sampled

[3] Selected locations that are under-sampled

[4] Selected locations where only the 0 to 6 inch depth was analyzed

[5] Polygon/Sections where characterization does not support excavation depth

Table 2. Additional Characterization Sampling Results
Reach O
Hayton Area Remediation Project

11/18/2011

Sample Name	Total PCBs (mg/kg)	Data Gap[1] and Location	Comments
RO 008L 0-6	4.56	[1] 3OL	Organic silt.
RO 008L 6-12	0.773	[1] 3OL	Organic silt.
RO 010L 0-6	2.23	[1] 5OL	Organic silt.
RO 010L 6-12	5.18	[1] 5OL	Organic silt., some shells
RO 012L 0-6	1.39	[1] 10OL	Organic silt.
RO 012L 6-12	1.33	[1] 10OL	Organic silt.
RO 013L 0-6	5.88	[2] 323+00-W10 (2OL)	Organic silt.
RO 013L 6-12	11.5	[2] 323+00-W10 (2OL)	Organic silt.
RO 014L 0-6	1.96	[2] 324+70-W10 (7OL)	Organic silt.
RO 014L 6-12	11.3	[2] 324+70-W10 (7OL)	Organic silt.
RO 015L 0-6	0.972	[2], [3] 325+70-W10 (7OL)	Between the top of the bank and the depression. Organic silt.
RO 015L 6-12	2.19	[2], [3] 325+70-W10 (7OL)	
RO 016L 0-6	1.81	[3] 7OLa	In the depression. Organic silt.
RO 016L 6-12	3.85	[3] 7OLa	
RO 017L 6-12	<0.0385	[4] RO-328+00-S100 (11OLa)	Organic silt.
DUP 139	0.0464 (J)	[4] RO-328+00-S100 (11OLa)	Organic silt.
RO 018L 6-12	0.0439 (J)	[4] RO -319+60-S150 (1OLb)	Organic silt.
RO 507R 12-18	0.314	[5] 1OR/O202	Organic silt.
RO 509R 0-6	7.28	[2] 322+00-E10 (5OR)	Organic silt.
RO 509R 6-12	1.41	[2] 322+00-E10 (5OR)	Organic silt.
RO 510R 0-6	1.16	[2] 325+00-E10 (5OR)	Organic silt.
RO 510R 6-12	2.38	[2] 325+00-E10 (5OR)	Organic silt.
RO 511R 0-6	2.65	[3] 3OR	Organic silt., some shells.
RO 511R 6-12	3.29	[3] 3OR	Organic silt., clay observed at 12".
RO 512R 0-6	1.85	[3] 5OR	Organic silt.
RO 512R 6-12	<0.0612	[3] 5OR	Organic silt.
RO 513R 0-6	1.87	[3] 11OR	Organic silt.
RO 513R 6-12	1.85	[3] 11OR	Organic silt.
RO 515R 6-12	<0.0302	[4] RO-327+00-N30 (9OR/10OR)	Organic silt.

(J) = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

[1] Data Gap Types:

[1] Polygons not sampled

[2] Locations where the stream has moved laterally and deposition of PCBs on the inside of the meander is likely and where not previously sampled

[3] Selected locations that are under-sampled

[4] Selected locations where only the 0 to 6 inch depth was analyzed

[5] Polygon/Sections where characterization does not support excavation depth

Table 3. Additional Characterization Sampling Results
Reach P
Hayton Area Remediation Project

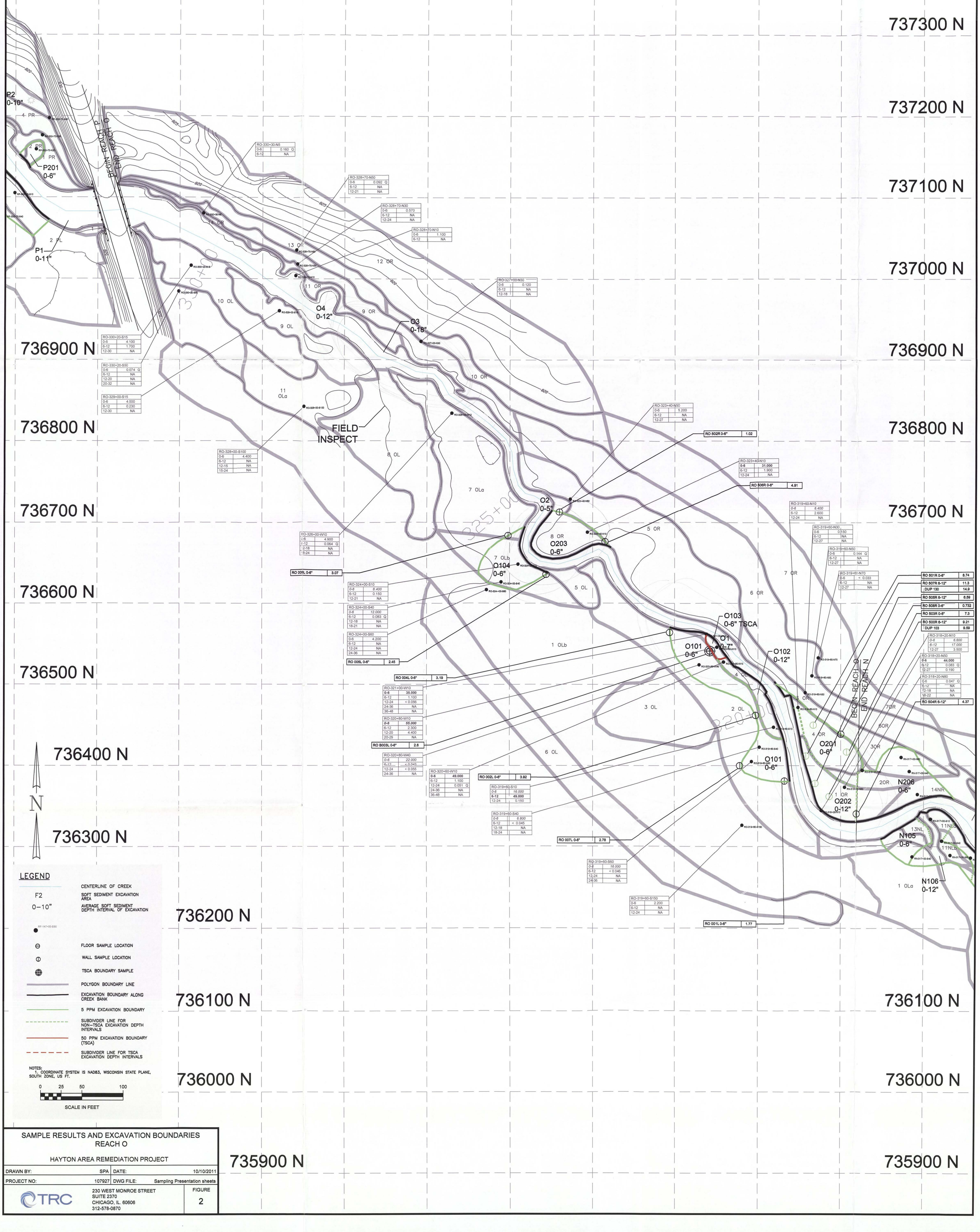
11/18/2011

Sample Name	Total PCBs (mg/kg)	Location	Comments
RP 509R 0-6	3.21	P202	Immediately east of the tributary. Organic silt.
RP 510R 0-6	6.66	P202	Organic silt.
RP 511R 0-6	2.49	P202	Organic silt.
DUP 132	3.03	P202	Organic silt.

(J) = Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

2466100 E
2466200 E
2466300 E
2466400 E
2466500 E
2466600 E
2466700 E
2466800 E
2466900 E
2467000 E
2467100 E
2467200 E

737400 N
737300 N
737200 N
737100 N
737000 N
736900 N
736800 N
736700 N
736600 N
736500 N
736400 N
736300 N
736200 N
736100 N
736000 N
735900 N



N

LEGEND

- CENTERLINE OF CREEK
- F2 — SOFT SEDIMENT EXCAVATION AREA
- 0–10" — AVERAGE SOFT SEDIMENT DEPTH INTERVAL OF EXCAVATION
- RF-147+00-E60 — FLOOR SAMPLE LOCATION
- WALL SAMPLE LOCATION
- TSCA BOUNDARY SAMPLE
- POLYGON BOUNDARY LINE
- EXCAVATION BOUNDARY ALONG CREEK BANK
- 5 PPM EXCAVATION BOUNDARY
- SUBDIVIDER LINE FOR NON–TSCA EXCAVATION DEPTH INTERVALS
- 50 PPM EXCAVATION BOUNDARY (TSCA)
- SUBDIVIDER LINE FOR TSCA EXCAVATION DEPTH INTERVALS

NOTES:
1. COORDINATE SYSTEM IS NAD83, WISCONSIN STATE PLANE, SOUTH ZONE, US FT.

0 25 50 100

SCALE IN FEET

SAMPLE RESULTS AND EXCAVATION BOUNDARIES REACH O

HAYTON AREA REMEDIATION PROJECT

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FIGURE 2

2466300 E | 2466200 E | 2466100 E | 2466000 E | 2465900 E | 2465800 E | 2465700 E | 2465600 E | 2465500 E | 2465400 E | 2465300 E | 2465200 E

738000 N

737900 N

737800 N

737700 N

737600 N

737500 N

737400 N

737300 N

737200 N

737100 N

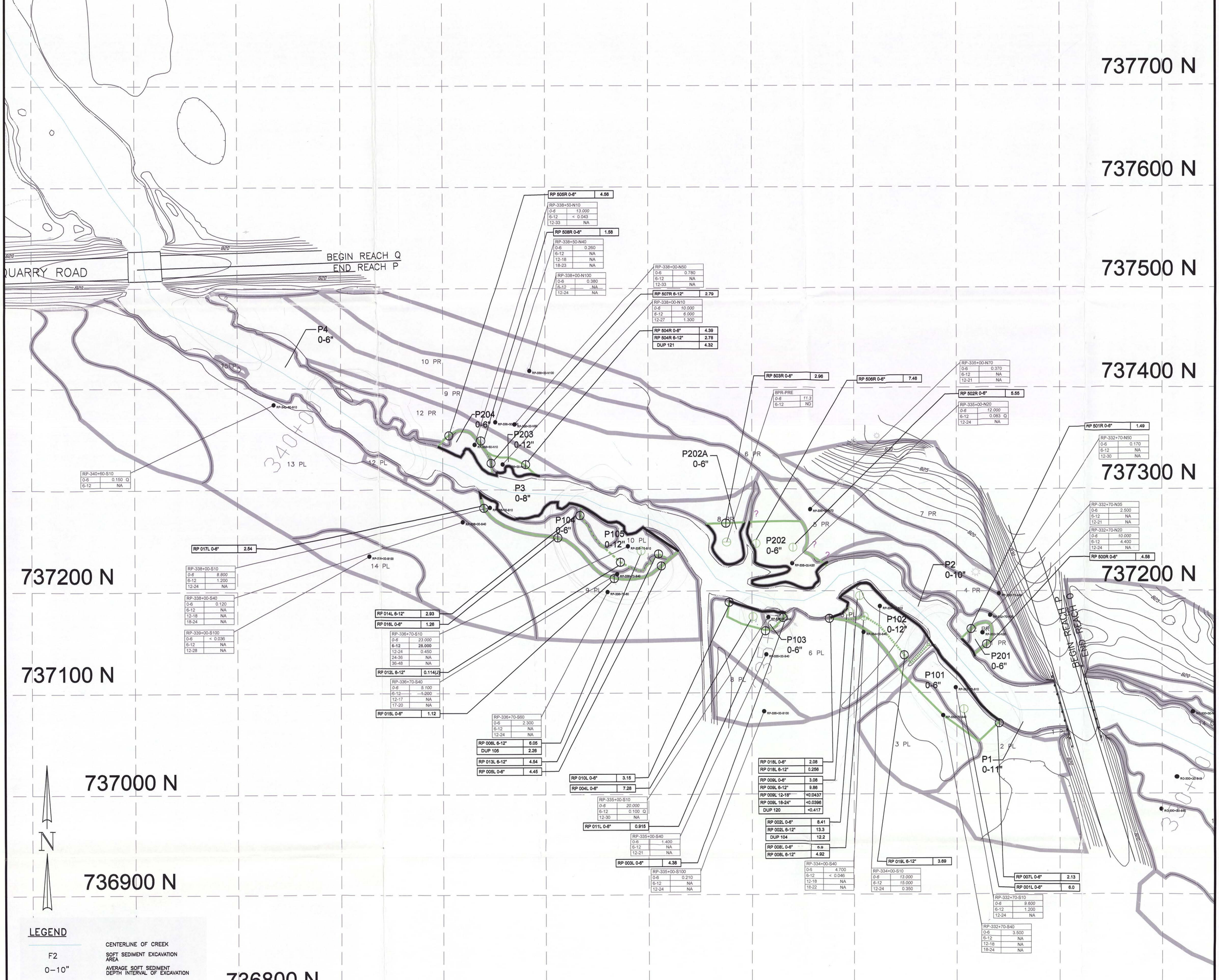
737000 N

736900 N

736800 N

736700 N

736600 N



N

LEGEND

- CENTERLINE OF CREEK
- F2 — SOFT SEDIMENT EXCAVATION AREA
- 0–10" — AVERAGE SOFT SEDIMENT DEPTH INTERVAL OF EXCAVATION
- RF-147+00-E60
- FLOOR SAMPLE LOCATION
- WALL SAMPLE LOCATION
- TSCA BOUNDARY SAMPLE
- POLYGON BOUNDARY LINE
- EXCAVATION BOUNDARY ALONG CREEK BANK
- 5 PPM EXCAVATION BOUNDARY
- SUBDIVIDER LINE FOR NON–TSCA EXCAVATION DEPTH INTERVALS
- 50 PPM EXCAVATION BOUNDARY (TSCA)
- SUBDIVIDER LINE FOR TSCA EXCAVATION DEPTH INTERVALS

NOTES:
1. COORDINATE SYSTEM IS NAD83, WISCONSIN STATE PLANE, SOUTH ZONE, US FT.

0 25 50 100

SCALE IN FEET

SAMPLE RESULTS AND EXCAVATION BOUNDARIES REACH P

HAYTON AREA REMEDIATION PROJECT

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FIGURE 3

2467000 E
2467100 E
2467200 E
2467300 E
2467400 E
2467500 E
2467600 E
2467700 E
2467800 E
2467900 E
2468000 E
2468100 E

736600 N
736500 N
736400 N
736300 N
736200 N
736100 N
736000 N
735900 N
735800 N
735700 N
735600 N
735500 N
735400 N
735300 N
735200 N
735100 N

BEGIN REACH O
END REACH N

BEGIN REACH N
END REACH M

RN 512R 0-6"	7.69
RN 511R 0-6"	1.09

RN-317+00-N60	
0-6	15.000
6-12	0.057 Q
12-24	NA
24-36	NA

RN-317+00-N40	
0-6	0.500
6-12	0.071 Q
12-18	NA

RN-317+00-N10	
0-6	8.700
6-12	2.200
12-24	NA

RN 508R 0-6"	1.1

RN 507R 0-6"	1.09

RN 506R 0-6"	2.39

RN-315+50-E10	
0-6	1.800
6-12	NA
12-24	NA

RN-315+50-E30	
0-6	6.700
6-12	0.330
12-24	NA

RN-315+50-E50	
0-6	0.200
6-12	NA
12-15	NA

RN 505R 0-6"	1.33

RN 520R 0-6"	1.78

9NR-PRE	
0-6	13.2
6-12	0.17

RN 519R 0-6"	0.79
RN 518R 0-6"	0.926

RN 504R 0-6"	0.745

RN-313+00-E100	
0-6	3.600
6-12	NA
12-18	NA
18-27	NA

RN-311+60-E80	
0-6	0.300
6-12	NA
12-24	NA

RN-311+60-E40	
0-6	1.200
6-12	NA
12-24	NA

RN-311+60-E10	
0-6	13.000
6-12	0.110 Q
12-24	NA

RN 510R 0-6"	2.18
RN 503R 0-6"	1.65
RN 517R 0-6"	0.748

RN-309+40-N40	
0-6	0.660
6-12	NA
12-24	NA

RN-309+40-N10	
0-6	3.400
6-12	NA
12-30	NA

RN 502R 0-6"	1.51
RN 502R 6-12"	2.37

RN-308+30-N60	
0-6	0.610
6-12	NA
12-24	NA

RN-308+30-N100	
0-6	0.150
6-12	NA
12-18	NA
18-24	NA

RN 509R 0-6"	1.09
RN 509R 6-12"	0.0802(J)

RN-308+30-N10	
0-6	13.000
6-12	22.000
12-24	0.550

RN 501R 0-6"	0.544
RN 501R 6-12"	0.086

RN 500R 0-6"	0.797
RN 516R 6-12"	0.576
RN 513R 0-6"	2.44

RN-305+90-N90	
0-6	3.000
6-12	NA
12-18	NA
18-24	NA

RN-305+90-N60	
0-6	16.000
6-12	0.910
12-24	NA

RN 515R 6-12"	0.191

RN-305+90-N10	
0-6	22.000
6-12	8.800 J
12-30	0.400

RN 514R 0-6"	3.12
RN 514R 6-12"	1.21
DUP 109	0.657

RN 010L 0-6"	2.44
RN 016L 6-12"	3.46

RN-317+00-S10	
0-6	9.100
6-12	14.000
12-21	2.500
21-23	NA

RN 015L 6-12"	12.4
DUP 106	8.21

RN-317+40-S40	
0-6	34.000
6-12	0.580
12-24	< 0.057
24-36	NA

RN 011L 0-6"	2.53
RN 011L 6-12"	0.158(J)

RN-317+00-S40	
0-6	29.000
6-12	0.790
12-21	4.400
21-24	NA

RN 009L 0-6"	1.75
RN 009L 6-12"	1.88

RN-317+00-S60	
0-6	14.000
6-12	30.000
12-24	0.810
24 - 36	0.270

RN 008L 0-6"	0.87
RN 008L 6-12"	2.17
DUP 94	2.4

RN-316+00-S10	
0-6	17.000
6-12	0.250
12-24	NA
24-36	NA

RN-315+50-W10	
0-6	12.000
6-12	2.400
12-24	NA
24-30	NA

RN-315+50-W40	
0-6	2.300
6-12	NA
12-20	NA
20-24	NA

RN 014L 0-6"	6.71
RN 007L 0-6"	1.38

RN 006L 0-6"	1.57
RN 006L 6-12"	2.11

RN-311+60-W10	
0-6	6.800
6-12	35.000
12-24	1.800
24-33	NA

RN 005L 0-6"	2.79
RN 005L 6-12"	2.0

RN-311+60-W40	
0-6	0.280
6-12	NA
12-24	NA
24-36	NA

RN-311+00-W100	
0-6	2.200
6-12	NA
12-24	NA

RN 004L 0-6"	1.15
RN 004L 6-12"	4.62
RN 013L 6-12"	8.96

RN-309+40-S10	
0-6	8.400
6-12	39.000
12-27	0.220

RN 020L 6-12"	5.43

RN-309+40-S40	
0-6	8.400
6-12	< 0.049
12-21	NA
21-36	NA

RN-309+40-S70	
0-6	11.000
6-12	< 0.051
12-18	NA
18-30	NA
30-33	NA

RN-309+40-S90	
0-6	14.000
6-12	< 0.051
12-24	NA
24-36	NA

RN 003L 0-6"	2.63
RN 012L 0-6"	5.79
RN 019L 0-6"	3.83

RN-307+60-S10	
0-6	7.100
6-12	12.000
12-18	11.000
18-27	0.410

RN-307+80-S90	
0-6	37.000
6-12	< 0.054
12-24	< 0.051
24-36	NA

RN-307+60-S50	
0-6	15.000
6-12	0.310
12-24	NA

RN-307+60-S80	
0-6	6.000
6-12	< 0.046
12-24	NA
24-34	NA
34-36	NA

RN 002L 0-6"	2.95

RN-305+90-S10	
0-6	15.000
6-12	0.890
12-24	0.400

RN-305+90-S40	
0-6	1.400
6-12	NA
12-18	NA
18-30	NA

RN 001L 0-6"	0.662

RN 021L 0-6"	0.936
DUP 126	1.66
RN 021L 6-12"	0.121(J)

RN 017L 0-6"	8.11
RN 017L 6-12"	13.8
RN 017L 12-18"	ROCK

RN 022L 0-6"	14.5
RN 022L 6-12"	0.975
RN 024L6-12"	5.76
RN 025L 0-6"	4.65
RN 025L 6-12"	4.39
RN 025L 12-18"	22.2
RN 018L 0-6"	10.9
RN 018L 6-12"	3.21
RN 023L 0-6"	3.48
RN 023L 6-12"	9.09

O102 0-12"
O201 0-6"
O101 0-6"
O202 0-12"
N206 0-6"
N6 0-7"
N205 0-6"
N105 0-6"
N106 0-12"
N107 0-6"
N204A 0-6"
N5 0-10"
N204 0-6"
N104 0-12"
N4 0-8"
N3 0-10"
N103 0-12"
N203 0-12"
N102 0-18"
N101 0-6"
N201 0-12"
N202 0-6"
N2 0-8"
N108 0-18"?
N1 0-8"
N109 0-12"
N110 0-6"
M109 0-12"
M4 0-7"
M108 0-12"

7 OR
6 OR
4 OL
3 OR
OL
4 OR
3OR
7OR
6OR
2OR
1 OR
14NR
13NL
11NL
11NLb
1 OLa
12NR
12NL
10NL
9NR
8NR
11NR
10NR
6NR
8NL
7NL
5NR
4NR
6NL
4NL
9NL
5NL
3NR
3NL
2NR
2NL
1NR
1NL
19MR
18MR
16MR
17MR
21ML
19ML
18ML
20M

LEGEND

- CENTERLINE OF CREEK
- F2 — SOFT SEDIMENT EXCAVATION AREA
- 0–10" — AVERAGE SOFT SEDIMENT DEPTH INTERVAL OF EXCAVATION
- RF-147+00-E60 — FLOOR SAMPLE LOCATION
- WALL SAMPLE LOCATION
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NOTES:
1. COORDINATE SYSTEM IS NAD83, WISCONSIN STATE PLANE, SOUTH ZONE, US FT.

0 25 50 100
SCALE IN FEET

N

SAMPLE RESULTS AND EXCAVATION BOUNDARIES REACH N

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FIGURE 1

2467000 E | 2467100 E | 2467200 E | 2467300 E | 2467400 E | 2467500 E | 2467600 E | 2467700 E | 2467800 E | 2467900 E | 2468000 E | 2468100 E

736600 N

736500 N

736400 N

736300 N

736200 N

736100 N

736000 N

735900 N

735800 N

735700 N

735600 N

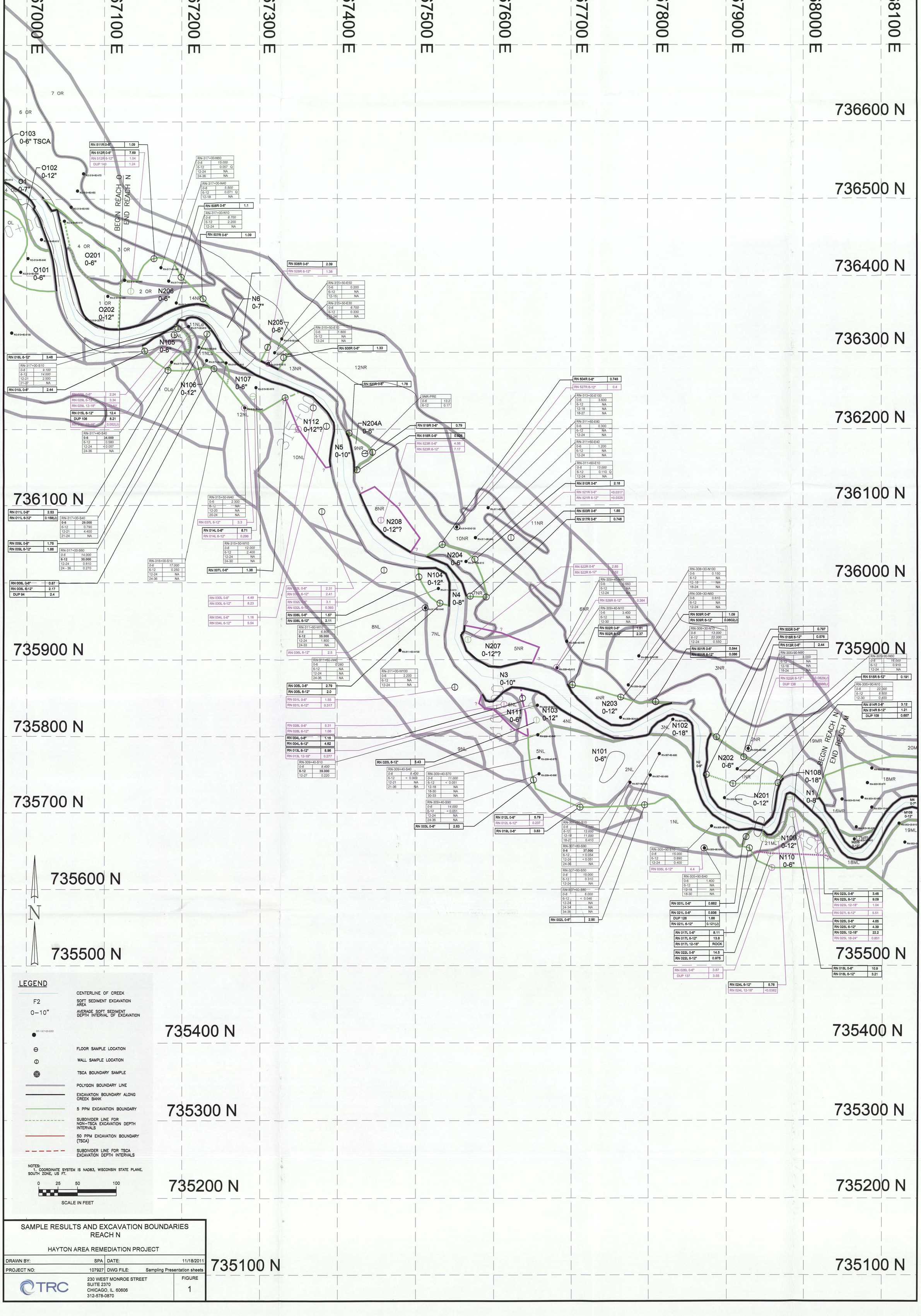
735500 N

735400 N

735300 N

735200 N

735100 N



SAMPLE RESULTS AND EXCAVATION BOUNDARIES REACH N

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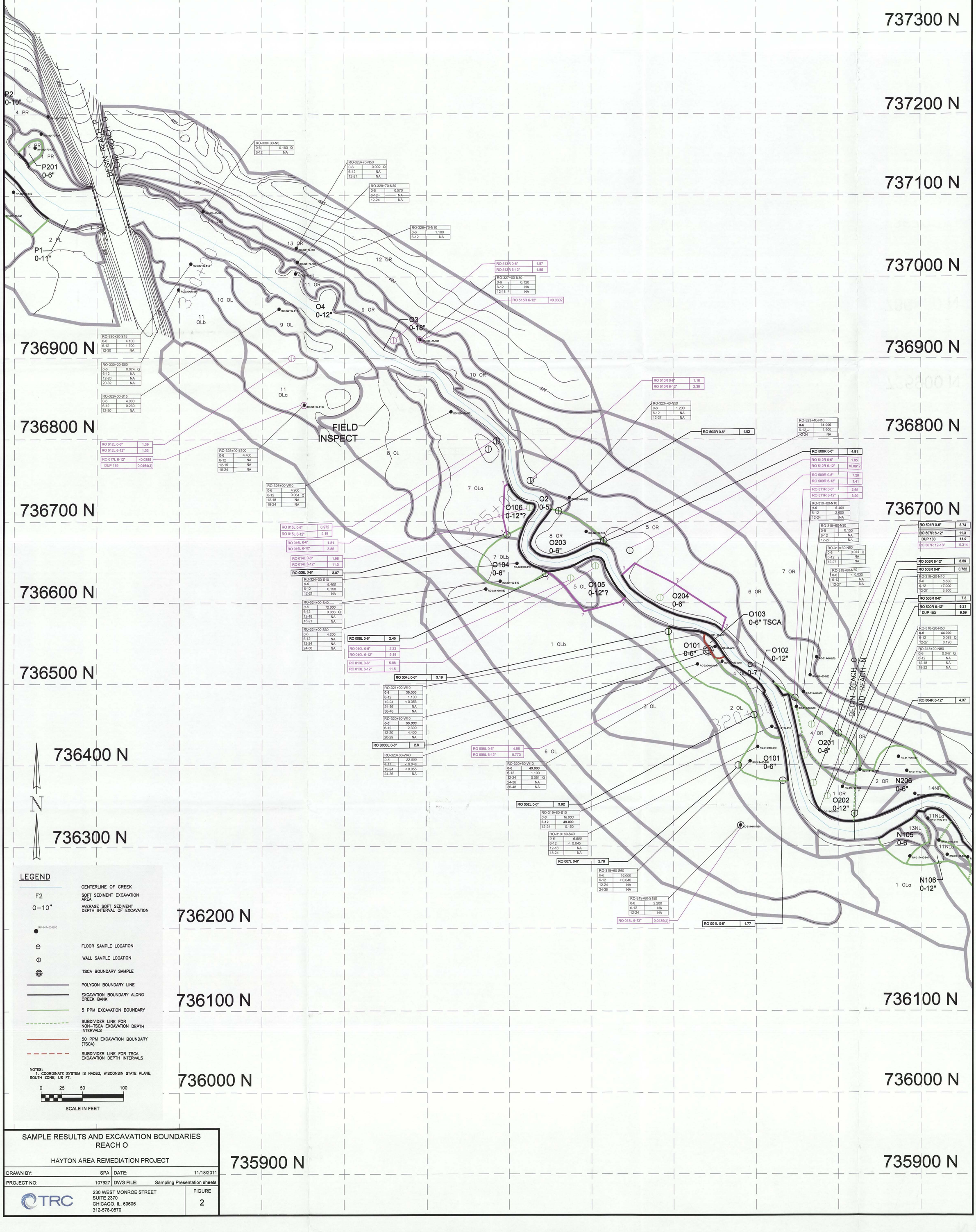
FIGURE 1

2467200 E | 2467100 E | 2467000 E | 2466900 E | 2466800 E | 2466700 E | 2466600 E | 2466500 E | 2466400 E | 2466300 E | 2466200 E | 2466100 E

737400 N | 737300 N | 737200 N | 737100 N | 737000 N | 736900 N | 736800 N | 736700 N | 736600 N | 736500 N | 736400 N | 736300 N | 736200 N | 736100 N | 736000 N | 735900 N



LEGEND

- CENTERLINE OF CREEK
- F2 — SOFT SEDIMENT EXCAVATION AREA
- 0–10" — AVERAGE SOFT SEDIMENT DEPTH INTERVAL OF EXCAVATION
- RF-147+00-E60 — FLOOR SAMPLE LOCATION
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NOTES:
1. COORDINATE SYSTEM IS NAD83, WISCONSIN STATE PLANE, SOUTH ZONE, US FT.

0 25 50 100

SCALE IN FEET

SAMPLE RESULTS AND EXCAVATION BOUNDARIES REACH O

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FIGURE 2

2465200 E
2465300 E
2465400 E
2465500 E
2465600 E
2465700 E
2465800 E
2465900 E
2466000 E
2466100 E
2466200 E
2466300 E

738000 N
737900 N
737800 N
737700 N
737600 N
737500 N
737400 N
737300 N
737200 N
737100 N
737000 N
736900 N
736800 N
736700 N
736600 N

QUARRY ROAD
BEGIN REACH Q
END REACH P
BEGIN REACH O
END REACH P

P4 0-6"
P204 0-6"
P203 0-12"
P3 0-8"
P104 0-6"
P105 0-12"
P202A 0-6"
P202 0-6"
P103 0-6"
P102 0-12"
P101 0-6"
P2 0-10"
P201 0-6"
P1 0-11"

RP 505R 0-6" 4.56
RP-338+50-N10: 0-6 13.000; 6-12 < 0.043; 12-33 NA
RP 508R 0-6" 1.58
RP-338+50-N40: 0-6 0.260; 6-12 NA; 12-18 NA; 18-23 NA
RP-338+00-N100: 0-6 0.380; 6-12 NA; 12-24 NA
RP-338+00-N50: 0-6 0.780; 6-12 NA; 12-33 NA
RP 507R 6-12" 2.79
RP-338+00-N10: 0-6 10.000; 6-12 6.000; 12-27 1.300
RP 504R 0-6" 4.39
RP 504R 6-12" 2.78
DUP 121 4.32
RP 503R 0-6" 2.96
8PR-PRE: 0-6 11.3; 6-12 ND
RP 509R 0-6" 3.21
RP 506R 0-6" 7.46
RP-335+00-N70: 0-6 0.370; 6-12 NA; 12-21 NA
RP 502R 0-6" 5.55
RP-335+00-N20: 0-6 12.000; 6-12 0.083 Q; 12-24 NA
RP 510R 0-6" 6.66
RP 511R 0-6" 2.49
DUP 132 3.03
RP 501R 0-6" 1.49
RP-332+70-N50: 0-6 0.170; 6-12 NA; 12-30 NA
RP-332+70-N35: 0-6 2.500; 6-12 NA; 12-21 NA
RP-332+70-N20: 0-6 10.000; 6-12 4.400; 12-24 NA
RP 500R 0-6" 4.58
RP-340+60-S10: 0-6 0.150 Q; 6-12 NA
RP 017L 0-6" 2.54
RP-338+00-S10: 0-6 8.800; 6-12 1.200; 12-24 NA
RP-338+00-S40: 0-6 0.120; 6-12 NA; 12-18 NA; 18-24 NA
RP-339+00-S100: 0-6 <0.036; 6-12 NA; 12-28 NA
RP 014L 6-12" 2.93
RP 016L 0-6" 1.26
RP-336+70-S10: 0-6 23.000; 6-12 28.000; 12-24 0.450; 24-36 NA; 36-48 NA
RP 012L 6-12" 0.114(J)
RP-336+70-S40: 0-6 5.100; 6-12 1.200; 12-17 NA; 17-20 NA
RP 015L 0-6" 1.12
RP-336+70-S60: 0-6 2.300; 6-12 NA; 12-24 NA
RP 006L 6-12" 6.05
DUP 105 2.28
RP 013L 6-12" 4.54
RP 005L 0-6" 4.45
RP 010L 0-6" 3.15
RP 004L 0-6" 7.28
RP-335+00-S10: 0-6 20.000; 6-12 0.100 Q; 12-30 NA
RP 011L 0-6" 0.915
RP-335+00-S40: 0-6 1.400; 6-12 NA; 12-21 NA
RP 003L 0-6" 4.38
RP-335+00-S100: 0-6 0.210; 6-12 NA; 12-24 NA
RP 018L 0-6" 2.08
RP 018L 6-12" 0.256
RP 008L 0-6" 3.08
RP 009L 6-12" 9.86
RP 009L 12-18" <0.0437
RP 009L 18-24" <0.0396
DUP 120 <0.417
RP 002L 0-6" 8.41
RP 002L 6-12" 13.3
DUP 104 12.2
RP 008L 0-6" 5.9
RP 008L 6-12" 4.92
RP-334+00-S40: 0-6 4.700; 6-12 < 0.046; 12-18 NA; 18-22 NA
RP-334+00-S10: 0-6 13.000; 6-12 15.000; 12-24 0.350
RP 019L 6-12" 3.69
RP 007L 0-6" 2.13
RP 001L 0-6" 6.0
RP-332+70-S10: 0-6 9.600; 6-12 1.200; 12-24 NA
RP-332+70-S40: 0-6 3.500; 6-12 NA; 12-18 NA; 18-24 NA

16 PL
13 PL
12 PL
14 PL
11 PL
10 PR
9 PR
12 PR
11 PR
6 PR
8 PR
3 PR
5 PR
7 PR
9 PL
10 PL
8 PL
6 PL
4 PL
3 PL
4 PR
2 PR
2 PL
1 PL
11 OLb

LEGEND

- CENTERLINE OF CREEK
- F2 — SOFT SEDIMENT EXCAVATION AREA
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- SUBDIVIDER LINE FOR TSCA EXCAVATION DEPTH INTERVALS

NOTES:
1. COORDINATE SYSTEM IS NAD83, WISCONSIN STATE PLANE, SOUTH ZONE, US FT.

0 25 50 100
SCALE IN FEET

SAMPLE RESULTS AND EXCAVATION BOUNDARIES REACH P

HAYTON AREA REMEDIATION PROJECT

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FIGURE 3